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THE

AMERICAN FARMER:

A

MONTHLY MAGAZINE

OF

AGRICULTURE AND HORTICULTURE.

THE OLDEST AGRICULTURAL PUBLICATION IN THE UNITED STATES.

Has probably a larger COUNTRY *circulation than any publication of any kind South of New York.*

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PACIFIC GUANO vs. PERUVIAN GUANO.

Those who have given attention to the composition of Peruvian guano, will notice upon an examination of the *Inspection Reports of Pacific Guano*, that the *character* and *composition* of the two guanos are almost identical.

The difference exists simply in the *relative proportions* of *precisely* the *same elements* of *fertility*.—Now the practical point of inquiry is, whether the proportions of the elements as found in *Pacific Guano*, constitute it a fertilizer of equal or greater value than Peruvian Guano; and this is a question of *the very highest importance* to the agricultural interests of the *entire South*.

It is important, *first*, because the price of *Pacific Guano is* $30 *to* $35 *per ton less than the price of Peruvian*, hence there would be a saving in money of $1,750,000 in the purchase and use of 50,000 tons. It is important, *secondly*, because it would break up the monopoly of the *Peruvian Government*, which has been most odious from the beginning. It is important, *thirdly*, because its use would give to the soil of the country nearly 100 per cent. more earthy phosphates than would a like quantity of Peruvian Guano, the benefits of which would ensure to the next as well as the present generation.

In 200 lbs. *Peruvian Guano* there are 100 to 110 lbs. *animal matter*, 25 lbs. *ammonia*, and 50 to 55 lbs. *phosphate of lime*.

In 200 lbs. *Pacific Guano* there are 75 to 80 lbs. *animal matter*, 7 to 8 lbs. *ammonia*, and 80 to 90 lbs. Phosphate of Lime, 28 to 30 *lbs. of which is in an immediately soluble form*. Now how is the truth to be arrived at, as to whether the *latter proportions* of the elements will produce as good or better results than the former?

We say, in reply, that the truth of questions of this kind is arrived at in two ways:

First, Theoretically, by rational deductions from *known and observed facts*.

Secondly, By the *disinterested testimony* of competent persons, giving the results of practical experience. This sort of testimony must be accepted, for without it no truth could be established. In regard to the first method, we assert that *certain facts*, upon which nearly if not all consumers of *Peruvian Guano* agree, give rise to a rational inference that the *proportions* of its elements are defective. Among these facts are, that it produces an *excessive vegetable growth*, the product of grain rarely, if ever, being in proportion to straw; *again*, that cotton and tobacco grown from it suffer materially from drought or excessive rains: *again*, that its continued use tends to exhaustion of the soil. These facts we say, with others, give rise, upon reflection, to a rational inference that *ammonia* and *Phosphate of Lime* in *Peruvian Guano*, exist in defective proportions, and we are sure no intelligent man can fail to become satisfied upon full *investigation*, that the truth is that *Peruvian Guano* contains a *large excess of animal* matter and *ammonia*, and is largely *deficient* in *Phosphate of Lime*; and further, that this *misproportion* constitutes its *material defect*.

In regard to the second method of ascertaining the truth, we say that if a theoretical truth suggested by *rational inference*, is *confirmed* by the *uniform, concurrent testimony* of disinterested witnesses, as the result of *practical experience*, then no rational mind can resist the conclusion. It must be accepted is truth. *Prejudices* must give way. *Now we assert that it is true, that Pacific Guano* is a better fertilizer than *Peruvian*, that an equal application of lbs. per acre, produces in many instances *better* results at one-third less cost, and has never failed to produce equal results, and that the cause is found in the fact that its elements exist in better *proportion*.

In evidence of these *assertions*, we refer, first, to the *reason* of the matter as indicated above; secondly, to the *correspondence* from the following named *gentlemen, farmers in Virginia* and *Maryland*, whose testimony is *direct*. These gentlemen are well known in their respective regions, and some of them widely known. Their original letters may be seen at our office:

B. W. Leigh, Blanton, Cumberland Co., Va.; T. A. Ball, Prince William Co., Va.; Allison & Addison, Richmond, Va.; Jos. S. Lewis, Pittsylvania, Va.; Wm. B. Morton, Esq., Botetourt, Va.; Grasty & Rison, Danville, Va.; Thos. R. Joynes, Accomac, Va.; Wm. D. Reynolds & Bro., Norfolk, Va.; Harris & Spooner, Charlottesville, Va., Dr. J. L. Adkins, Talbot Co., Md.; S. Ogle Tilghman, Queen Ann's Co., Md.; Edw. A. Richardson, Worcester Co., Md.; Isaac Conner, Worcester Co., Md.; John B. Timmons, Worcester Co., Md.; E. C. Wade & Co., Savannah, Ga.; J. R. & P. A. Dunn, Forrestville, N. C.

In view of the above it must be manifest to all, that whatever preconceived opinions may be, that it is the *material interest* of the farmers of *Virrginia* and the *South* to at least satisfy themselves of the value and economy of this Guano by its use to greater or less extent.

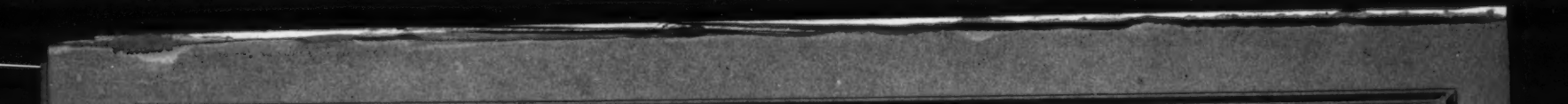
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CONTRAST.

The vast importance of Pacific Guano to the agriculture of the country, compared with Peruvian Guano, will be clearly seen by the following contrast, and it is worthy of the careful attention of all consumers of guano.

Assuming 50,000 tons of Peruvian Guano are used in the United States per annum, the *cost* to the farmers of the country, at the present price, would be $6,000,000, (six millions of dollars,) and would restore to the soil of the country 12,000 tons of earthy phosphate of lime. The same capital invested, in Pacific Guano would purchase at present prices, 92,307 tons, which would restore to the cultivated soil of the country 39,692 tons of precisely the same phosphate of lime, which is 27,000 tons more than would be received from the Peruvian Guano; in fact there would be more *soluble phosphate* alone received from *Pacific Guano*, by 1,000 tons, than would be received *altogether* from the *Peruvian*. Are not these important facts for the farmers to consider? *The truth is*, the farmers and planters of the South have been, and are *wasting* money for *ammonia* in Peruvian Guano, and *depreciating* their soils by restoring *less phosphoric* acid than is removed by their crops, which system *must* terminate in exhaustion. The phosphate of lime contained in an ordinary application of Peruvian Guano, is totally inadequate, while the ammonia contained in the same application is far more than is either desirable or necessary.

JOHN S. REESE & Co.





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DEVOTED TO

Agriculture, Horticulture and Rural Economy.

[ESTABLISHED 1819.]

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

Sixth Series. **BALTIMORE, NOVEMBER, 1866.** **Vol. I.—No. 5.**

NOVEMBER.

THANSGIVING.

"The spring's sweet influence, Lord, was thine,
The plants in beauty grew,
Thou gavest the summer's suns to shine,
The mild, refreshing dew.

"These various mercies from above,
Matured the swelling grain;
A kindly harvest crowns thy love,
And plenty fills the plain.

"We own and bless thy gracious sway;
Thy hand all nature hails,
Seed-time nor harvest, night nor day,
Summer nor winter fails."

Farm Work for the Month.

THE CORN CROP.

The corn crop should now be gathered and housed, as expeditiously as possible; except that which was of late growth, and needs longer time for drying. All such should have been left to cure upon the stalks as they stood in the field. There is danger always of large bulks heating in the corn crib, and there may be more than usual this wet season, but whenever the condition of the crop is such as to cause no risk in this respect, no time should be spared in getting it secured from depredations of all sorts.

CORN FODDER.

In the use of the corn fodder, which is supposed to have been well saved, let the stalks be fed early in the season, that the refuse may have the longer opportunity to rot before the season of hauling out manure. Blades should be kept for working and driving stock, in spring and summer. The shucks make good provender for working oxen. Corn fodder of every description is valuable for milch cows, and those especially that are kept to their milk during the winter months should be well supplied with it, for not even good clover hay is superior in promoting the secretion of milk.

FEEDING STOCK FOR SLAUGHTER.

If hogs have been some weeks in their pens, they may now be put upon full feed, and the fattening process promoted by all necessary means. Comfort and quiet, in addition to sufficiency of food, are what they need. Give these by such means as you can command.

Ground and cooked food are greatly more economical, but in the press of fall work we hardly hope to have the food of stock thus prepared, when it is so extremely convenient to throw in the ears without preparation. At any rate, a tight floor of plank, or a perfectly dry one of earth, should always receive the corn, unless the fattening hogs are raised from the ground, and store hogs have the opportunity of acting as scavengers to save the waste from the pens.

The feeding of beeves should be carried on with system and regularity, avoiding especially excessive feeding, and remembering that their digestive powers do not allow so fast feeding as those of hogs. They must be fed a longer time and in moderate quantities. Otherwise, there will be great waste of food. If not in their stalls, let them be, at least, always dry and comfortable.

The same is to be remarked of sheep. Do not, under the impression of their being so well protected by a woolen fleece, allow them to be exposed to storms of rain, and to lie on the wet ground. Feed with regularity, and moderately,

and protect them against alarm from dogs, or any other cause of disquiet.

STORE STOCK.

The principles which apply to fattening stock, are equally applicable to growing and store cattle of all kinds. The chief difference being in the quantity of food allowed, and the degree of confinement.

Sheds open to the south, and protected on the other three sides, and from twenty-four to thirty feet deep, will afford sufficient protection against weather, and keep the stock in better condition than close houses which cannot be thoroughly ventilated. Pure, fresh air, is very necessary for all sorts of stock, and can do no harm, even if frosty, unless there is exposure to wet at the same time.

Working oxen, milch cows, and calves, should be fed separately. Horses do much better unhaltered, in boxes where they may turn freely, than in stalls.

Sheep should not be confined to sheds, but allowed the free use of them in bad weather, and calves do very well, if fed and sheltered with sheep.

Hogs should be kept away from other stock, and never allowed to sleep in damp litter, or manure heaps. A range in a wood lot, and a bed of leaves on a south hill-side, under cover, is a very suitable arrangement for them. Sows should go to the boar the latter part of the month, and will bring their litters early in March. This will give the young stock advantage of the whole season's growth.

Water should be provided in the yards, if possible. There is great trouble and inconvenience, and, often, suffering on the part of stock, for want of this necessary provision. They need it more in winter when kept on dry food, than in summer, and should not have it in large quantities, but little and often. During the settled cold weather, there is no occasion for cattle going outside of their yards at all, if water be provided.

POTATO CROP.

There should be no loss of time now, in securing the potato crop. Dig in dry weather. Let them lie, only long enough to dry off the surface moisture. Then pile them in conical heaps of from twenty to fifty bushels, as you may think most convenient, on ground perfectly drained, and cover with six inches depth of straw and as many of earth. They may stand so until it begins to freeze hard, when another layer of straw, and twice the thickness of earth should be put; or if you mean to keep them in a cellar, they may be removed there. Access of water to the roots after being buried, must be especially guarded against.

RUTA BAGA AND OTHER ROOTS.

These may be put away in the same way as potatoes, but are not so liable to damage by frost. Beets and carrots for family use should go into the cellar. Parsnips and salsify should be left where they grow, and taken out in moderate supplies, as wanted.

TOBACCO.

Tobacco houses should be now closed, except in fine, sunny weather, when they should be opened, to dry off the accumulating moisture. Do not strip until the leaf stems are quite dry.

ICE PONDS.

Put them in order, see that the dam is quite secure. Cut off weeds and grass, and let the water on at once.

Durham Cattle.

The short horn Durham cattle hold their reputation well, wherever bred; and the prices at which they are sold remain as high as ever. Mr. Thorn, of Duchess county, N. Y., paid $5000 for a Durham bull a few years ago in England, and was offered a fair advance on that price, by a gentlemen who wanted to retain him in that country.

The Durhams are best adapted to smooth, rich lands, where the grasses grow very luxuriantly —pasture lands where clover grows a foot high, all over the field, is what they need.

As milkers, it is only occasional animals that are noted for the large quantity of milk produced, not every cow, nor so many of them as to render that breed particularly desirable as dairy cows; but for *beef* no cattle in the world excels them in the quality of the beef, and the weight of the carcass.

A good young Durham cow, full blood, is worth from $200 to $300, and yearling heifers, about $100; and they will, probably, bring those prices for many years to come.

Our native cows are much improved by crossing with the Durhams, as many stock breeders can testify.

☞If 17,000,000 acres in Holland and Belgium support 8,000,000, 77,000,000 acres in the United Kingdom ought to support 36,000,000, nearly 5,000,000 more than her present population, whereas the land does not half feed the people, and its supplies of corn and milk are falling off.

The Vegetable Garden.

Prepared for The American Farmer, by DANIEL BARKER, Maryland Agricultural College.

NOVEMBER.

Clear off all decaying substances, and stir the surface of the soil on dry days among growing crops, as cabbage, spinach, lettuce, endive, &c. Get vacant ground manured and spaded, or ploughed up quickly as possible that it may be exposed to the influence of the winter; every opportunity of favorable weather should be made available in carrying out whatever spading, trenching, ploughing, and draining have been laid out for the winter months. Cabbage, lettuce, celery, and all other vegetables should be trimmed at the rubbish heap, and not on any part of the garden, as it not only looks unsightly, but forms a hiding place for grubs and other insects injurious to gardens.

BROCOLI and CAULIFLOWER where grown, and is required to head late, should be dug up and laid in trenches in well sheltered places, in nearly a horizontal position, covering the roots and stems up to the leaves, which will check their luxuriant growth, and protect the hearts of the plants in severe weather.

CABBAGES.—Those planted out last month, and sufficiently advanced to admit of being earthed up, should have it done before severe frost sets in.

CELERY.—It is necessary to take advantage of every favourable opportunity to earth up all that requires it; rather let it remain as it is than to attempt to do so while wet, as it will afterwards rot in a very short time.

LETTUCE PLANTATIONS for spring use should be frequently looked over and kept free from weeds, slugs, &c. If the latter are troublesome, sprinkle fresh lime over the ground early in the morning or late in the evening, when the weather is mild; any now ready for use must be protected from frost.

ENDIVES.—Transplant as many as possible into frames, where they may be protected from frost, rain, &c. Nothing is more injurious upon young advancing salads than sudden frosts after heavy rains.

POTATOES.—The land intended for their culture next season, would be greatly benefitted by being roughly spaded up, or ploughed at the present time.

SPINACH.—Protect by covering lightly with corn stalks, or other litter free from noxious seeds, and which is not liable to being blown away by the wind; be careful in picking the leaves, to tread upon the ground as little as possible.

The Fruit Garden.

Continue the operations of pruning and planting fruit trees at every available opportunity; fork up the ground about young fruit trees, to destroy insects; scrape the moss and lichen from the stems, stir up the soil around fences, walls, &c. Such places afford a ready refuge for insects and other vermin to hide in security. It is a good plan to shake fresh lime over the ground thus disturbed. Attend to the directions given the two preceding months.

The Flower Garden.

In the absence of frost, a variety of works incidental to this department may be continued; borders and beds not cleaned should be at once finished up. Pinks, of doubtful hardihood, tea and Bourbon roses, should have a little protection. We repeat many instructions, inasmuch as the weather may continue open and mild, thereby beguiling some of us into forgetfulness of the approach of winter. Fuchsias, and other half hardy plants recently removed, should be protected; dahlia roots should be occasionally examined, in order to counteract the effects, if damp. Continue to plant for summer, hyacinths, tulips, narcissus, crocus, snow-drops, &c., in pots and glasses. Refer to direction for October.

THE HYACINTHS.—Of all flowers that grow and adorn our clime, not one has more universal patronage than the "hyacinth." It is the ladies' flower, indeed, it may be called everybody's flower, as it is so admirably adapted for the position it holds, being very easy of growth, most beautiful in appearance, deliciously fragrant, and last, but not the least, the pleasure it affords, may now be purchased at a trifling expense. The cultivation of the hyacinth, for sale, is confined to Haarlem, (Holland), and its neighborhood, where *hundreds* of acres are entirely occupied by it; a field of hyacinths, in full bloom, is a sight gorgeous in the extreme. For the benefit of the ladies, who are readers of the *Farmer*, who are fond of the cultivation of them in glasses, we subjoin the following hints:

From the first of October until the end of December, fill the glasses with water, (rain water is the best,) place the bulbs so that the base just touches the water; place the glasses in a dry, dark place, and when the roots are about three

inches long, they may be brought to the light, but not too suddenly exposed; as the flower and foliage advance, give all the air and light you can, otherwise they will be drawn up weak. When brought to the light, the glasses should be filled with water to the base of the bulb, afterwards fresh water should be given whenever that in the glasses becomes stagnant, taking care that it is of the same temperature as the room in which they are growing; turn the glasses frequently to prevent ill-shaped plants.

CULTURE OF HYACINTHS IN POTS.—Hyacinths to flower in spring, and for succession, should be planted in October, November, and December. The best compost we have used for them was equal parts of good, turfy loam, well decomposed cow dung, and sharp river sand, the sized pots, used for ground cultivation, from five to six inches. Hyacinths, like all other plants, require good drainage, we place about one inch of broken pots at the bottom of each pot, with half an inch of good, rotten cow dung upon them, then fill up the pot with compost, with a little river sand upon the top, on which place the bulb pressing it down firmly, filling round with the soil, just leaving the crown out. When this is done give them a good soaking of water, taking care to let them have plenty of time to drain before ploughing; for plunging, we choose a hard, dry place out of doors, covering them to a depth of ten inches with old bark in coal ashes being careful to protect them by mats, or otherwise, from severe frosts. Let them remain until the pots are well filled with roots, then remove them, with a frame, gradually exposing them to light; in a short time place them in a house where the temperature is about 60 degrees. Pay good attention to watering, and as the foliage and flowers advance, occasional waterings of liquid manure is very essential. When the flowers commence to expand, the temperature may be gradually lowered, and when fully expanded, the plant may be taken to a cool house or room where there is plenty of light.

☞ "Eighty years ago," observes Mr. Fisher, "Arthur Young, who travelled on the continent with a mind prejudiced against small farms, exclaimed, 'The magic of property transforms sand into gold. Give a man secure possession of a bleak rock and he will turn it into a garden; give him a nine year's lease of a garden and he will convert it into a desert.' Can we doubt which to choose?"

☞ The industrial establishments of New York employ 50,000 females.

For the "American Farmer."

Renewing Orchards.

BY DANIEL BARKER,

Md. Ag. College.

I have, in the course of my experience, during the past sixteen years, in this country, seen many grave errors made, in planting and after management, of the roots of fruit trees. I have had for a long time a desire to say a word of warning against the many mistakes which I have seen so frequently made. In many different parts of the States I have noticed orchards from a half acre to fifty acres in extent, with the bodies, stems, and branches of the trees, thickly covered with lichens and moss, the consequence of which must be the closing up of the pores, whereby the trees were of course dwarfed and unproductive, what fruit there was being exceedingly poor and unfit for market. This is, of course, a state of extreme bad management upon the starving principle. Again, I have witnessed many small and large collections of fruit trees, pears especially, that had grown so luxuriously that they seldom produced anything but wood. This is the consequence of too high and gross feeding.

Now, as it is probable that some of your readers intend to plant orchards, or have them already, in either one or the other of the above mentioned unprofitable states, I will endeavor to point out the methods we have adopted in order to remedy both evils.

We will suppose an orchard of apple and pear trees in the first named condition, put under our care to be improved and brought into a condition to produce plentiful crops of large, high-colored, and rich flavored fruit. Supposing that the trees were not too old or too far gone to be restored. The first thing would be to examine the soil, which, most likely, I should find not very deep, the subsoil in all probability an adhesive, wet clay, or some hard soil of a similar nature. I should then, during the early months of fall, cut drains from three to four feet deep, or as deep as an outlet could be got for the water to pass off. If *very* wet, I should lay the drains fifteen feet apart, but if not so wet, then from twenty to twenty-five feet, according to circumstances. At the bottom of each drain I should lay two-inch tile, which are procurable in most of our cities and towns. I should be very careful to do this part of the work myself, as upon its being well done depends the entire success of the operation. I would pack the tiles firm in their places with stone or brick ends, covering them over to the depth of six inches. I would then fill up to within one foot of the surface with

branches of Red Cedar, "Arbor Vitæ," or Hemlock, or of such other hard wood (Evergreen branches) as might be at hand. In the disposal of the branches in the drain we are careful not to displace any stone, brick ends or tile. The draining completed I would have all the bodies, stems and branches well scraped and cleaned of all lichens and moss, and when all the foliage had fallen, I should paint the whole of each tree with a mixture of fresh or quick lime, fine clay, and fresh cow dung, mixed together into a paint-like consistence.

In order to give the roots of the trees a fair chance, I should, after the draining was completed and the trees well cleaned, trench or plough the ground. Should the orchard be of small extent, I should adopt the first named method, by setting out on one side of the space a breadth of about fifty feet (more or less) broad. I should then open a trench the length of the piece set out, and about three feet wide, all the soil from that trench should be taken away and laid on a ridge where the trenching of the entire space would be finished. When this is done, set out with a line the next trench of the same width. I should take off about six inches of the top and throw into the bottom of the trench, upon which I should lay all the soil, and a portion of the subsoil, unless it should be very bad indeed, by exposing the subsoil to the air it ameliorates and is much improved. By this deep trenching there is a large space given for the roots to roam in. As I proceeded I should of course come across the trees, the roots of which I should carefully preserve without injury even to the smallest fibres. I should carefully examine all the roots and any that were decayed I should cut with a sharp knife clean off to a sound part, and in order to balance "root and branch," it might be necessary to prune away some of the branches at the same time; at all events I should be careful to cut away all that was in any way diseased.

If the situation of the orchard is exposed to strong currents of wind, and the heads of the trees large, then I should have them secured so that they would not be loosened or broken down. The best way I have found to do this, is to procure a sufficient number of strong stakes, and drive down, very firmly, four of them to a tree, at the opposite points of the compass. If the trees are of a moderate size, the stakes should be driven in about twelve or fifteen feet from the body of the tree; if smaller, ten feet would be sufficient. I then fasten four lengths of tarred rope to the tree, the other ends to the stakes, the stays will then support the trees from every quarter the wind may blow from. I have repeatedly proven this method, not only in the protection of fruit, but large forest trees, after removing them from a distance, and have found it the best plan of the many I have tried to prevent the winds from blowing down newly planted trees, or those which have been deeply trenched around.

If, in trenching, any of the trees should be found to be in a state of decay, I should discard them and plant young ones in their places. Having attended to every tree on the place that was trenched or ploughed, and done all that was necessary in a workman-like manner, I should expect, in a few years, to see the trees restored to perfect health and producing abundant crops of fruit—sufficient to repay all the labor and expense they might have caused in trenching, clearing, &c. Having put all into good order in the orchard, attention should be paid to keep them so, by giving a good coating with a compost of shell lime, soil, and manure, about every third year. The compost should be put together and turned over several times for twelve months previous to laying it on. I should keep the surface stirred during the summer months by the harrow or cultivator, never spading or ploughing, as these operations are sure to destroy the best of the roots, which lay near the sun, thus preventing them from having the benefit of the air and sun. Orchards, generally, are converted into a pasture for horses, cows, sheep, &c., which we think a bad system; the evil is three-fold, the ground is trampled upon until it becomes very hard, which cramps the roots. The trees are rubbed against, which injures the bark; the lower branches are disfigured and injured by the cattle browsing upon them. I would not allow any horses, cattle or sheep in my orchards. This I know is a great objection with the farmer, who has often said to me, in reply to the above, "cannot I make some use of the land after the heavy expense of draining, trenching and planting?" Yes; when the trees have made good roots and fair sized heads, you may then plant it with such crops as will not injure the trees; and when the trees approach each other I would sow the ground with grass seeds, but should always mow the grass and feed it to the cattle out of the orchard. This, to many, I know, will seem needless; but I have witnessed in my journeys through "the States" more orchards, if not destroyed, rendered unproductive, by turning cattle into them, than from any other cause (need of drainage excepted) whatever. I conclude this part of the subject by reiterating that in the first place make a good provision for the root, *take good care* of them, afterwards the result will be *fine, healthy, productive and profitable* orchards.

Farming Prospects in the South.

CLIFTON, FAIRFAX CO., VA., Oct. 1, 1866.

MR. EDITOR: It is a gloomy, rainy day, and I do not know of any better occupation than to sit down and give you my views on a vital question. I think, that of all the important questions for us farmers, none goes farther and reaches deeper in our pockets, than the *labor question*. We cannot disguise, even with the greatest indulgence for the negro, that free negro labor cannot be depended upon. Of course I except well brought up negroes of ripe age, but their number is *now very small*. The growing up generation of negroes is worthless and will remain so in general. Their idea of liberty is laziness, and they will rather now and then pick up a small job, which will *barely* enable them to provide for *bread* enough not to starve, or go and steal, than they will go to work regularly and make something. I make this statement by the experience I have had this last year. A plain farmer may manage to get along with this trifling set of hands, but how with the cotton, rice, and tobacco planter? As I used to plant cotton in Georgia, before, and in the beginning, of the war, I know that it would be foolish of a man to attempt, in general, to plant this staple without a *perfect* control over his hands. For instance, you have hired, say fifty hands, you prepare your crop for this force, and everything goes on swimmingly until in May, when the cotton is about 4 to 6 inches high, one of the heavy rains, which we have in the South, sets in for about a week. Before the rain, your cotton field was perfectly clear of grass, but after the rain you will not be able to find a spot free from grass, large enough to place your foot. (I am, of course, speaking of rich land.) It takes three or four days after the rain before the ground becomes sufficiently dry for work. Meanwhile the sun shines so hot, that if you put your hand in the ground you can hardly keep it there, and you may imagine how the grass continues to grow. At last, after having waited anxiously for three or four days to get to work to relieve your cotton; the *moment* to do so has arrived, you go through your quarter to start your hands, but lo!—one has got the belly ache, another rheumatism in his leg, another pain in his back, another headache, still another is sick *all over*, and so on. By the time you have got through, you find that six or eight hands are sick, or PRETEND to be sick, because they know heavy work is at hand, and you have to be satisfied to start forty-two or forty-four hands, where the FULL work of fifty hands is ABSOLUTELY needed, the consequence is, that you either have to work your entire crop imperfectly, and risk to lose a big part of it, or you have to throw out thirty or forty acres, and work the balance as required. Under *all* circumstances there is a loss for you of from fifteen to twenty bales of cotton. No amount of work after this period can redeem this loss. You perceive plainly that this loss is brought on by your hands PRETENDING to be sick, but you have no power to force them to fulfil their contract, to give you the amount of labor they agreed to do for you for the wages you agreed to pay them. It may be said, deduct from their wages any loss of time, but, my dear sir, a few paltry dollars would poorly compensate for the loss of thousands. But suppose you get over this period all safe, and you make a full crop, still you are apt to suffer by the same disadvantage; when the cotton has opened fully over all the field, and you cannot pick it at the proper time, a storm may come and blow it out, and you will have to pick it from the ground, full of sand and dirt, it having lost several cents per pound in value. How is a man to risk what little the war has left him under such circumstances? You may say, engage white labor, take emigrants; well, it MIGHT do after *a* year or *two* when they have been *taught how* to work, but white labor can *not exist* on rich cotton and rice plantations. They may *exist* on poor pine-land where they make sixty or seventy pounds of cotton to the acre, but this certainly would not pay so well as planting corn, west, where they would enjoy health and a more moderate climate. This is the reason why the South never *has* been and NEVER WILL BE settled thickly with white labor; another objection is the prices which are demanded for white labor. I wrote two weeks ago to the American Emigrant's Aid and Homestead Company in New York, being desirous of obtaining some hands. By return mail I received the following answer: "Good farm-hands can get $30 per month and board in *any* parts of the East, West, and North, and female servants $10 to $12 per month and board." Now, any man, least acquainted with farming South, knows that it is *impossible* for a farmer to pay such wages. Suppose a hand cultivates thirty acres with corn, at twenty-five bushels per acre, makes 750 bushels, at 75 cents per bushel, would make $550:

His wages would be.....	$360
Board per month, $10.....	120
One horse for three months	45
	$525

This would be under very favorable circumstances, but how, if any misfortune happened

to the crop? Under such circumstances what are we to do? All there is left to us is to be worried to death by worthless negroes. It *might* certainly be otherwise, if the worshipped negro vagabond was treated like a white vagabond in the North, that is, if he was *made* to work, or punished by being sent to the workhouse, where he would have to work for a living; but, in these glorious negro times such things are not to be thought of, and we poor white slaves have to submit.

The cotton crop, coming in this year, will prove what I have said. I see the Commissioner of Agriculture estimates the cotton crop to be 1,800,000 bales, at 400 lbs per bale, but I tell you there will not be made 1,400,000 bales against 6,000,000 bales before the war, and, instead of increasing, the crop will decrease, as the greater part of Northerners and former officers of the Northern army, who now are engaged in planting cotton, will find it unhealthy to continue; besides Congress has taken care to throw another obstacle in the way of cotton planting, by imposing a tax on the planter of three cents per pound in favor of the Northern manufacturer who gets the three cents back after having manufactured the cotton.

I wish you would put this communication in "sorter" shape and publish it, as I think it might help to enlighten some of the public on the labor question.

With high regard, yours,

L. A. HANSEN.

The Pine Hills of Georgia Again.

MR. EDITOR:—My article in your September number, descriptive of a portion of Middle Georgia, has, much to my surprise, involved me in an extensive correspondence. Persons in the Western and Middle States have written to me, asking for further information on the subject, and expressing a desire to go with me to live among the Pine Hills; while persons at the South have taken the occasion to set forth the attractions of their respective neighborhoods, or to describe lands which they are willing to sell to industrious, well disposed people from the North; and all assurring such immigrants a hearty welcome. Among the letters from the South, called out by the article referred to, is the following, which I think, you will agree with me in saying, ought not to be confined to my private reading, as the information it contains is of public interest, and will meet, in part, the want which my Northern correspondence shows to exist of just such statements of facts from well informed sources; and I trust the writer will excuse me for the liberty I have taken in sending his valued communication to you for publication. I am sure that your Northern readers will join me in sincerly thanking him for it.—D. H. JACQUES, 389 *Broadway, New York.*

SUMMERVILLE, near Augusta, Ga.
September 13th, 1866.

D. H. JACQUES, ESQ., 389 *Broadway, N. Y.:*

SIR:—I have seen your communication to the *American Farmer*, announcing your intention to make a home in that part of the State of Georgia where I live, and though not personally known to you, I have learned enough of your character and antecedents to make me desirous that you, and those whom you propose to bring with you, should receive a welcome to our State. I therefore have determined to write you a few lines to this effect; and propose to enhance this welcome by adding something to the information which yourcommunication imparts in relation to the Pine Hills, which you seek as a home, and in which, or the neighborhood of which, I have found a home for fifty odd years.

You have said that the higher portions ot this belt of country were not very fertile. Left to their own resources, after a few years cultivation, this is true of them. But, it is also true, that the industrious hand of man can produce from them results, which are, perhaps, more remunerative than similar exertions can produce in other latitudes. In the soil of nearly all this region the energies of production are stimulated in a remarkable degree by deep ploughing, sub soiling, and manuring. Peruvian guano, applied in connection with such effective upturning of the soil, produces, what it is not extravagant to call, wonderful results. Influences of soil and climate are such here as rapidly to effect disintegration where deep ploughing is used, and afford a matrix in which manures quickly and powerfully serve the generative forces of nature. I could mention some surprising results which have been effected in this region by certain of our large corn and cotton planters in past years; but it will be more satisfactory and useful, perhaps, for me, in this communication, to show what can be done among us by careful agriculture upon a smaller scale. One or two illustrations only have I room to give.

A thrifty farmer, who is my neighbor, is engaged in the butchering business, and incidently cultivates, chiefly with his own hands, about three acres of what may be called poor pine land; which, however, as does most of the land in this section, possesses a good subsoil of clay. This

land he ploughs and harrows thoroughly, and applies to it broadcast, stable manure in moderate measure. The present summer has been the most unseasonable by far, that I have ever known; yet in June, from about three acres of this land, this man reaped nearly fifty bushels of wheat. He immediately put the ground, without other application of manure, into Indian corn and cow peas. His corn is now (September 13th) in the silk, and will probably average for him, about twenty-five bushels to the acre. His crop of peas, and pea fodder, grown on the same ground with the corn, will be nearly, if not quite, equal in value to the corn. If he were to apply no other manure to this land for several years, with deep ploughing, good crops of corn could be grown upon it, or more than a bale of cotton of five hundred pounds to the acre. But, if, on the contrary, he continues to apply manure in moderate quantities, its productive energies will become very great. A part of this ground would probably yield him five hundred bushels of sweet potatoes to the acre.

In my own garden, notwithstanding the unpropitious season, I have made, on the same square of ground, two crops of corn for the table; the second being now nearly fit for use. I have done this often; one year for the sake of the experiment, letting the first crop of common Indian corn (not the six weeks', or Sugar corn,) harden and dry, so as to be fit for the mill. Then I planted the same piece of ground from it, and had another crop before frost. In that garden I have had a ripe cantelope in the last days of May. I have frequently had tomatoes, green peppers, and the egg-plant, until Christmas day, and once I had green peas in January. This garden is on the sandy slope of one of the picturesque hills to which you refer, elevated some two hundred and fifty feet above the plain of the Savannah river. It is due to this elevation, and the dryness of the air, that frosts are slower to effect vegetation than in the plains, and that we have vegetables and fruits, earlier and later, than in the more fertile vallies.

It is easy to see, from these facts, that though our lands may not be so fertile as in some other portions of our country, yet that to the small farmer, who employs careful and thrifty tillage, perhaps, as much, if not more, may be gained by double crops, without injury to the land, but rather adding to its fertility, as in more fertile soils, where only one crop can be made on the same ground in the same season.

It should be remembered, also, that in our land thus cultivated, there is a mine of riches in its cotton-producing capacity, to which the farmer, by way of variety in his agriculture, can appeal, and from which he can derive a staple of quality only surpassed by the cotton of the Sea Islands. And the seed from his cotton will afford the finest sort of manure for his corn. In past years many of our planters manured all their corn with their cotton seed.

It is true that all the finer grasses of the North, clover, &c., do not flourish well with us, though some of them do very well. We have grasses, however, which afford fine pasturage, and by careful tillage, abundant and profitable crops of hay. Sometimes, crops of hay are thus reaped from the ground after another crop has been removed, and frequently good yields of crow-foot, crab-grass, and pea-vines are obtained from the corn-field, which have their growth after the corn is made, and without additional cultivation. But the pea-vine is the clover of our fields, and is very prolific in yielding fine and nutrious hay This vine, deriving much of its nutriment, as it does, from the atmosphere, does not exhaust the land, and may be very profitably employed in soiling for other crops.

Crops of turnips are very heavy on our properly cultivated lands, and afford food for man and beast during the whole winter; continuing to grow until about December, and remaining in the ground all winter. Cabbages can also be cultivated successfully in the same way, and sweet potatoes in proportion—often of from one hundred to five hundred bushels to the acre.

Then, as to fruits, you know that peaches, figs, and melons of the most delicious varieties, grow here in the greatest abundance, and when a little pains is taken, from June until November. Large and profitable crops of peaches and melons are made for market, and many go yearly to the Northern cities. And what has been done by negro-labor is slight indeed, compared with what can be done by some of your friends among the intelligent and industrious farmers of the North. Our people, in former years, did not give much attention to the improved varieties of apples, pears and grapes; but a change, in this respect, has been gradually going on, in with which, my neighbor, Dr. Berckmans, that exellent gentleman, his son, Mr. P. C. Berckmans, to whom you refer, and your friend, the intelligent and energetic Mr. Redmond, have had much to do, and now we have some fine orchards.

Our trees are not so productive, perhaps, as in other soils; but the long continuance of a fruit maturing season, gives us great advantages. By careful planting, the varieties may be so cultivated as to afford a supply of fruit for a longer

season than in most countries. On the 31st day of May last, I pulled a ripe pear from one of the the trees (*the Madeline*) in my small orchard; we have had pears of other varieties all through the summer, and will continue to have some for weeks to come, though the drought, which prevailed a part of the months of July and August, has injured much fruit, and some trees. When my Lawrence, and Easter Beurre trees, shall be a year or two older, I may hope also for a winter supply.

Usually an abundant grape crop can be produced on our lands, though the Catawba, upon which we at first mainly relied for wine, has failed to a great extent. If we could continue to cultivate this grape successfully, (and perhaps treatment by some of your skillful Northern vine dressers might succeed with it here) a very delightful wine can be made from it in this section. There is much more of sugar in this grape, when grown in our climate, than at the North or West. The wine, therefore, has more of what is called body, is less acid, keeps well; indeed, seems to mellow with age. I have this wine, of the vintages of 1860 and 1861, on my farm, which persons of tastes cultivated in Europe, have pronounced fully equal to some of the best light wines in the Rhine countries. My neighbor, Mr. Berckmans, makes wine from several varieties of grape, and is quite successful with the Clinton grape, which yields an excellent wine, similar in character to the Claret or Bordeaux wines.

The foreign varieties of grape, so far, have not succeeded well with us, though sometimes we get a yield from some of them for the table; but the vines soon die out, and require renewing, in order to have a regular succession of crops, unless they can be more or less sheltered by glass from alternations of heat and moisture. But some hybrids from these varieties, crosses upon the native varieties, among which are some very fine grapes, succeed very well with us. The delicious little Delaware Grape does very well on our hills, both as a table and wine grape; is not subject to rot, and is moderately prolific. If I had time and space, I could mention others, which I either have tried, or known tried sufficiently to say that they can be cultivated with profit. I should not omit to say, that the Scuppernong grape grows here in the greatest luxuriance, one vine frequently covering many square rods of space, and yielding very many bushels of fruit, from which I have known a wine made, which after five years' age, resembled a good, and somewhat mellow Madeira. Wild grapes, as you have said, (some of which, with the aid of sugar, make a palatable wine,) abound in our woods, as do nuts and wild fruits of many sorts.

As to climate, what you have said is very true. The heat is by no means severe. During the summer, refreshing breezes prevail from the South. The extensive forests prevent radiation, and keep down the temperature to a considerable extent. Though this has been an unusually warm summer, I have not heard of the thermometer, in the shade, exceeding 96° of Fahrenheit, whilst at the North in many places you have had 100° or more. Innumerable sun-strokes have occurred with you, and I have not heard of one in Georgia. There is a difference between us as to heat in the longer continuance of our summer or warm season, though a great portion of this consists of very agreeable autumn or Indian summer weather. Our winters are mild. Almost any day in the year, women and children can go out and work without inconvenience. And what is more practical, though not more satisfactory, the husbandman all winter long can either put forward the preparation of his land, or other of his arrangements for the ensuing crop.

As to health: our bills of mortality will compare favorably with any in the world. The absence of extremes in heat or cold, partially accounts for this result. The dryness of the atmosphere—possibly the affluviae of pine trees and pine wood—will account for the absence of severe colds, and of pulmonary affections, in winter, as well as malarious diseases in summer. The silex of our hills affords the finest filter for the rains, and gives rise to streams of sweet and health-preserving water. In our gentle undulating country, these streams are numerous and perennial.

Whilst on the subject of the streams I may as well mention that they abound with excellent fish. They also afford to farmers good opportunities of constructing fish-ponds, where they can combine pleasure with profit, and raise large supplies of bream, red-breasted perch and trout, (so called,) all of which are delicious fish, unsurpassed, perhaps, for the table, are prolific, and can be bred at little expense in great numbers. This is not speculation on my part, but positive evidence as to practical facts.

As to taxation, it is a notorious fact that the public debt of Georgia is small. As you know the war has not added to it, our Legislature having repudiated the war debt. Our State railroad brings in a large revenue to the treasury yearly, and relieves the people from considerable taxation. Our credit is such that the Governor has been able to negotiate with Northern capitalists such

loans as we now need, and as serve to lighten in this crisis, the burthen of taxation upon the people.

The length of what I have written admonishes me, that I must not much longer trespass on your patience. I can only say, in addition, that our people, Mr. Jacques, are anxious to escape as soon as possible from the desolating effects of war. They wish their lands, now the chief sources of their wealth, to be improved in quality, and increased in value. They desire to preserve their children from degenerating in the scale of civilization. They wish to have among them the strong preponderance of the industrious, moral, christian, and educated elements of society. And they reason that these can be insured by the execution of such plans as you propose, by the settlement among them of men like yourself, and such as you would bring with you; and therefore, they are willing to part with portions of the lands which possess the advantages that you and I have pointed out, on advantageous terms, and at bargains. Thus, in the simple principles of an intelligent interest, you can find, if you choose, sufficient evidence of the sincerity, with which, for myself and friends, I welcome you and your friends to Georgia.

Very truly, your obedient serv't,

E. STARNES.

Commission Hucksters.

A correspondent, writing from Onancock, Accomac county, Va., representing the growers of Irish and Sweet Potatoes, cultivated largely in that section, says:

We have a complaint to make of Baltimore Commission Hucksters. During the war they got the commission up from 8 or 10 cents per barrel to 25 cents per barrel. Well, during the war, prices were high, and expenses were double what they had been, so there was not much complaint; but now there is a general complaint, and I think very justly so, that they still charge 25 cents on every barrel of potatoes, fruit, &c., that is sent to your market, and that is not all, the very men who sell our produce, sell to themselves, as they are the largest retail hucksters in the market.

Now, Messrs. Editors, nearly all of this business is done by a very few men, I think 3 or 4 do nearly all the commission business in that line. True their lincenses are high, $50.

But see, very often there are from 2 to 3,000 bushels there on a Monday or Wednesday morning; those there on Monday are sold out, and leave on Tuesday; those on Wednesday leave on Friday, sometimes Thursday. The sellers have nothing to do, but receive the money; and when the vessel is out, pay over to the Captain the amount of receipts, save the 25 cents per barrel. Now, Messrs. Editors, is there, or can there be no remedy for this. We are willing to pay a fair commission, say 10 cents per barrel, which will amply pay them. It is altogether a cash business, and consequently no risk to them. I am the owner of a small vessel that runs potatoes, &c., and the freighters all say that they would sooner take a little less somewhere else than send them to Baltimore, on that account, and consequently she runs to Washington, where they have no commission to pay. For my part I would much prefer her sailing to Baltimore; but so it is:

Charges in Baltimore 27 cents per bbl. commission and wharfage.

Charges in Washington 2 cents per bbl. for wharfage.

To the Editor of the American Farmer:

In your August number I see a piece headed, "Cows' Tails," on which you remark: "Can it be that there are dairies of cows with short tails, and can it be that anybody 'likes the style?'" Well, I must confess, that I "like" the "style," and that you will find this "style" in most all the different parts of the old country where dairies are the principal branch of farming. The reason why the tails are cut off at the end of the bone, is to prevent it from trailing in the urine and manure when the cow lies down.

Besides the precaution to cut the tail, the tail is tied to a rope, suspended from another rope on rollers, running parallel to the ceiling, on the ends of which rope there are weights heavy enough to keep the parallel rope straight; but, at the same time, light enough to allow the parallel rope to give away, in case such should be required if the cow lies down, and the rope to which the cow's tail is tied, should get under her.

Cutting the tail does not deprive the cow of the full use of the same when needed, because it will have obtained its full length by spring, when it is required to keep off flies.

Being an old planter and, farmer of thirty years' standing, who has a good deal of experience, both here and in the old country, I hope you will not consider it arrogant for me to have made the above remarks.—*Fairfax county, Sept.* 26, 1866. L. A. HANSEN.

Our objection was not to cutting off the switch of the tail, but the whole tail, bone and all, as seemed to be indicated in the paragraph commented on. The trimming of the switch while

the cow stands in the stable, and allowing it to grow again by "fly time," is a different matter. —Ed.

Elements of Vegetable Life..

BY GEO. M. VILLE, PARIS, FRANCE.

In consequence of the persevering efforts given to the study of plants of late years, agricultural production has been raised to the ranks of a scientific problem. It is in this spirit that I have for many years studied it at the Museum of Natural History. Here, my language will be more simple, familiar, and practicable; it will, nevertheless, retain its scientific character, science being the essential basis of everything I have to tell you.

If we seek to define the conditions which determine vegetable production, the influence which modify its growth, and the forces which govern its manifestations, we must commence by going back to the elements of vegetables themselves. We must separate from the vegetable its organic individuality, and consider only the chemical combinations of which it is the seat and result.

The analysis of all known vegetables or the products extracted from them, leads to the unexpected fact,—that fifteen elements only concur in these innumerable formations. These fifteen elements, which alone, serve to constitute all vegetable matter, are subdivided into two groups:—

First—The organic elements, which are encountered only in the production of organized beings, and the source of which is found in the air, and in water. They are carbon, oxygen, hydrogen, and nitrogen.

Second—The mineral elements, which resist combustion, and which are derived from the solid crust of the globe. They are potassium, phosphorus, sodium, chlorine, calcium, iron, magnesium, manganese, silicium, aluminium, and sulphur.

Vegetables are, in fact, and from the special point of view where we place them, only the varied combinations of which these fifteen elements are susceptible. In the same way that a language expresses our most delicate and profound thoughts, as well as the meanest, by means of the small number of letters which compose its alphabet—so do vegetable productions assume the most varied forms and dissimilar properties by means of these fifteen elements only, which compose the true alphabet of the language of nature.

Now, if it be so, we are justified in likening the vegetable to a mineral combination, a more complicated one, doubtless, but which we may hope to reproduce in every part, by means of its elements, as we do with the mineral species. This proposition, how astonishing soever it may appear to you, is nevertheless the exact truth. To prove it to you, permit me to establish a parallel between vegetables and minerals, from the different points of view which more especially characterize the latter. We will commence with their mode of formation and growth.

First, we perceive only differences. A crystal suspended in a saline solution, grows by the deposit of molecules, on the service, similar in composition and form to those which constitute its nucleus. These molecules, diffused through the solution, obey the laws of molecular attraction, and thus increase the mass of the primitive crystal. The vegetable, on the contrary, does not find diffused vegetable matter in the atmosphere, nor in the soil with which it is in contact. Through its roots and leaves it derives its first elements from without, causing them to penetrate into its interior, and there mysteriously elaborates them to make them ultimately assume the form under which they present themselves to our eyes.

We can, nevertheless, say that the process of vegetable production has something in common with the formation of a mineral. For in both cases I see a centre of attraction, which gathers up the molecules, &c., received from without. In the more simple case of the mineral, the combinations of the elements is previously accomplished; only a mechanical grouping takes place. In the more complex case of the vegetable, the combination and mechanical grouping are effected at the same time, and in the very substance of the plant. In both cases a formation is engendered by the union of definite or definable material elements.

From the point of view of composition, vegetables appear at first more simple, since they are derived from fifteen elements only, while at least sixty concur in the production of minerals; but in reality they are more complex, since each plant always contains the fifteen elements at once, while minerals, taken individually, never contain but a very small number, five or six at most. Among vegetables, the combination is also more intimate. In minerals, each of the constituents preserves up to a certain point, its individual properties. In the sulphates, for example, it is easy to prove the presence of sulphuric acid by adding baryta to it, which gives the insoluble precipitate of sulphate of baryta in these salts as well as in sulphuric acid itself. Besides, in thus withdrawing the sulphuric acid from a sulphate, we have not destroyed the sulphuric acid, we have only displaced it. But with

the group of elements which form a vegetable, it is not so; in them, all individual character disappears. Who can perceive the carbon, the nitrogen, the potassa, &c., which constitute the plant? Only the whole manifests its properties, and we cannot separate an element from it, except by destroying it past recovery. Notwithstanding these essential differences, we have, nevertheless, in both cases, to do with material combinations, that is to say, with phenomena of the same nature, one of which is more complicated than the other; they are two distant terms of the same series.

Let us conclude this parallel by comparing the forces which, in both cases, determine the grouping of the elements. When attraction is exercised at great distances, in the planetary spaces, for example, it depends only on the re-acting masses, and not upon their nature; when, on the contrary, attraction is exercised in contact, as in chemical combinations, it depends at the same time upon the mass and the nature of its elements. This new and more complex form of general attraction is called affinity. Gravitation, the first term of the series, which we call universal attraction, governs and harmonizes the movements of the stars; affinity, the second term of this same series, regulates the play of mineral combinations.

If we examine the formation of vegetables from this point of view, we shall see that it represents a still more complicated case of universal attraction, a third term of the series, if I may be allowed the expression. Here, in fact, the result depends at the same time on the re-acting masses, on the nature of the elements present, and on the action of a new force, in the embryo, which diffuses itself from thence throughout the vegetable, and impresses its special stamp upon the combination produced. Take two seeds of the same sort, having the same weight, remove from each of these seeds a morsel also of the same weight, only let one include the embryo in the amputation, and in the other let the embryo be left out, and take instead a fragment of the perisperm, then put both upon a wetted sponge The seed without embryo will soon enter into a state of putrefaction, the other, on the contrary, will give birth to a vegetable capable of absorbing and organizing all the products resulting from the disorganization of the first. There is then in this embryo a new power of organic essence, which modifies the ordinary course of affinities, and impresses upon the combinations present a special form, of which it is itself the prototype.

The formation of the vegetable is not the only case where foreign forces come thus to modify the ordinary play of affinities. Mix hydrogen and nitrogen together in the dark, there will be no combustion. Submit the mixture to the action of the solar rays, an explosion immediately takes place, and the gaseous mixture is replaced by a new product—hydro-chloric acid. Here then are two elements incapable of entering into combination by themselves, but which acquire this faculty by the intervention of a foreign force—light. Mineral chemistry abounds in examples of this kind.

In the greater complication of vegetables under these different relations, I consider it then to be correct not to see a sufficient reason for believing that nature has traced a line of absolute demarcation between minerals and vegetables, nor to admit that the laws of their formation have nothing in common with those better known laws which regulate the productions of the inorganic kingdom. I think, on the contrary, that nature is uniform in her general laws, and that by attentive observation aided by experiment, we may arrive at knowing them in all their effects. I perceive then nothing irrational in the attempt to arrive at the artificial realization of the conditions in which they are exercised to produce vegetables, as science has already succeeded in doing with minerals. This conclusion will acquire, I hope, a stronger and stronger evidence as we penetrate deeper in our researches, and I shall at once give a very striking confirmation of it, in showing that nature does not pass suddenly from the mineral to the vegetable, from crude matter to organized matter, but that there exists on the contrary, a class of compounds which lead us insensibly from the one to the other, and form the bridge which unites these two series of productions.

Preserving Eggs for Winter Use.

A country minister's wife writes to the Scottish Farmer: "Every evening I take all the eggs collected during the day, and rub them carefully with butter or the finest and purest lard. Every pore of the shell must be thoroughly filled, otherwise the air cannot be excluded. I have ready a box or tin canister, and plenty of salt. I put a layer of salt in the bottom of the box, and then place in rows my buttered eggs. Go on alternately with layers of eggs and salt until you leave perfect room for the lid closing firmly. The exclusion of air is the great secret of preservation. I have many different sizes of canisters stored in my pantry (on an *open* shelf) with preserved eggs. Those canisters I get from the baker or grocer for a trifle. My one and a half dozen canisters are 3d. each. My largest size

contain ten dozen eggs, and cost 1s. The lid is quite as important as the box. Be sure it is close fitting, otherwise you will be vexed to find the eggs like those one gets in London, very unlike *wise-like* Scotch eggs. Many ladies tell me they have particular positions for placing the eggs, but I find mine are delicious after four months, by merely placing them *comfortably*, without reference to top or bottom."

Horticultural Improvement.

A few years ago, it was predicted that "in a short time fruit would be a drug," but this "time" appears to be far off, if we are to judge by the prices obtained for all kinds of fruit at present, and there are no indications that the supply will be greater than the demand, at least for several years, for the population of our cities, towns and villages is increasing rapidly, and this class are not producers, but consumers There is an European demand springing up for choice American fruit, which promises to grow into important dimensions after some time, and to open a new channel for the production of the great West. An orchardist of the present day enjoys many advantages which were unknown to his predecessors in the same business. The pioneers of horticulture, in a new country, have always difficulties to contend with which are not in the way of their successors. Horticulture, instead of being neglected and uncared for, is now established in high places, enjoying the protection of organized societies, and the assistance of valuable periodicals. It has made wonderful progress within a comparatively recent period. In the beginning of the sixteenth century there were very few kitchen-gardens in England, and fruits and vegetables were imported from the Netherlands. Since that time the surface of the globe has been traversed by enterprising naturalists, and almost every country made to contribute something to furnish the gardens, hot-houses, and conservatories of England. Cauliflowers were originally brought from Cyprus, artichokes from Sicily, lettuce from Cos, shallots, or eschallots, from Ascalon, cherries and filberts from Cartaus, in Asia Minor, the peach from Persia, the plum from Syria, the pomegranate from Cyprus, the quince from Sidon, the olive from Greece. Every year brings contributions from various parts of the world.

The Royal Horticultural Society of England, which has grown up to such magnificent dimensions, and now wields such a potent influence in furthering the cause of Horticulture all over the world, did not exist until the commencement of the present century, at which time the "London Horticultural Society" was formed, through the exertions of Mr. Knight, Mr. Wedgewood, and Sir Joseph Banks. The Experimental Garden of the Society was not formed until 1817, and in 1822 it was removed to its present situation at Chiswick. Since that time Horticultural Societies have sprung up in almost every part of Great Britain and Ireland, and horticultural improvement has been "marching on" triumphantly in every part of the civilized world. In the United States it is making "giant strides," being compelled to do so in order to keep up with the progress of the arts and sciences and the wonderful development of agriculture and commerce. The establishing of Agricultural Colleges in all the States, with experimental gardens on their grounds, would be a most effectual method of forwarding "Horticultural Improvement," as the suitableness of fruit to the climate and soil of each State could be fully ascertained by actual experiment, and the most approved fruits, together with all the modern improvements in horticulture, disseminated. It is true that the peach crop is liable to failure in this country, and that dwarf pears and the choicest varieties of cherries sometimes disappoint the too sanguine expectations of the orchardist. It must be admitted that those pests of the orchard—the borer, the tent caterpillar, the apple-worm and the curculio, dispute every inch of ground with the horticulturist, but, with all these drawbacks, the United States surpasses every other country in climate and soil adapted for raising the greatest variety of fruit.—*Southern Ruralist.*

Home Decoration.

Next to wholesome food, home pleasures are necessary to enliven our spirits, promote our good health, and give a zest to rural life. What can give greater satisfaction to a family of refined taste than to have the grounds around the homestead decorated with the beauties of nature so bountifully furnished us? The species and varieties of trees, shrubs, roses, vines, &c, are now so numerous that a choice selection can be made to suit every clime, soil and exposure, and to bloom and fruit all the growing season. See them tastefully arranged and gorgeously dressed with foliage of various colors, and decked with blooms far transcending the most costly jewelry in brilliancy, and perfuming the air with their fragrance. In windy days they gracefully bow, prance and whirl around like sprightly youth in the dance, and the melody of the breeze serves them for music. How beautiful the picture and

the great enjoyment, to those who can appreciate it. It makes a cot a palace, and a home a paradise; the owner a king, and his wife a queen; it imparts a dignity to the manly graces of sons, and lustre to the beauties and virtues of daughters. The passing wayfarer is delighted with the scene, and sets it down in his mind as the abode of the great and good in heart, and the virtuous and wise in actions.

After planting climbing vines to clothe the veranda, and a few decidous trees around the house for shade in summer, all the other trees, shrubs and roses should be so arranged over the lawn that all will be seen at one view. Set the more dwarf nearest the house, and the taller farther off, and they will appear to rise in graceful folds as they recede from the eye, and the contrast of size, form and color, of the various individuals will show to greater advantage, and that will give additional graces to their charm.—*Rural Adv.*

Fruits in Southern Illinois.

A writer on fruit growing in Illinois says:

Three hundred and twenty-three miles south of Chicago, and forty-two miles north of Cairo, is the little town of South Pass, Union county, and the station Cobden, on the Illinois Central Railroad. The fruit farms here are all located on high hills, (bluffs they are called here,) the fruit trees and vines being in many places planted on ground so steep that it cannot be cultivated by horse labor. It is now the busiest of the berry season—the harvest of the strawberry crop. They began to ship from here on the 8th of this month, and have been daily shipping since, at the rate of from one to three car-loads of strawberries a day. Yes, my dear friends, from three to ten hundred bushels daily from this point.

As I write, over thirty spring wagons are unloading at the depot. To-day the shipment is three large-sized fruit cars full of boxes of rich, luscious strawberries. The country dependent on this point for shipping facilities extend for about four miles north and south by about five miles east and west of this station.

The "Wilson's Albany" is the only variety grown here to any great extent for market. These berries are large and very firm, keep a long time, and can be handled without bruising; hence the principle reasons for cultivating that variety. No one here pretends that this is a good variety to eat, yet they grow them, simply because they will bear shipping. Over three hundred acres of these, in many places almost precipitous hill sides, are covered with strawberry-vines, and are yielding more than an average crop this year. Yearly, this grand area is being extended; to-day many hands are engaged in setting new vines, and they will continue to so work until late in the summer. It should be remembered that every foot of this land was but eight years ago covered with the primitive forests, and that since that time the trees have been felled and burnt up, (in log heaps—not for firewood, but simply to get rid of it,) and the place made to put on somewhat of a civilized appearance.

The berries are picked by men, women and children, natives (as they are here called) "to the manor born." The growers pay from two to three cents per quart for picking, the lower price being paid for picking from the most prolific vines. The berries are all put up in quart boxes, which are all made here, there being three box factories within this fruit range. The manufacturers charge eight dollars per thousand for the box material, and the shippers have the boxes nailed together in their shipping sheds, where they are used. They pay children twenty cents per hundred for making the boxes, so that when ready to put into crates to ship, the boxes cost just one cent a piece. This, with the price paid for picking and for the crates, will make the berries cost the grower five cents per quart at the station here.

One week more will close up the strawberry harvest, after which time raspberries will begin to ripen, and be shipped. I cannot learn that there are more than from twenty to fifty acres in raspberries at this point, so it will be seen that the supply from here will be comparatively small.

Early apples will then be shipped, and by the time that crop is over, peaches will be ready; so that through the rest of this month, and through June and July, there will be a constant stream of fruit flowing northward from this point.

The pear crop will be large here. I was shown some trees that the owners estimated would net them ten dollars each. Pears are largely grown around here. One man has over twelve thousand pear trees on his place, while many have from one to six thousand. Dwarf pears are quite largely planted, but all plant standards for their permanent orchards, the dwarfs lasting only until the standards come into bearing.

The quantity of peaches to be shipped from this point is estimated by different persons at from 300,000 to 600,000 boxes. Even the lowest number seems almost incredible, yet when we know that there are about 200,000 bearing trees here, much of the wonderment will be "used up." He is looked upon as a small cultivator

who has not five thousand peach trees. One man claims to have shipped thirty-seven thousand boxes last year. I do not vouch for the truth of the statement, but so he assured me.

Vegetables are quite largely grown here—tomatoes and sweet potatoes especially. These grow in the valleys and ravines where the land is too low for fruit. One man here has over three acres of tomatoes, and another gentleman has about ten acres of sweet potato plants set out. General farming is not carried on to any extent here. Almost all the flour, pork, and so on, used by the first growers, is imported the ground being too valuable to be used for growing those staples.

Earth for Poultry House.

The employment of dry, pulverized earth as the means of deodorizing poultry houses, appears to be worthy of more attention than it has hitherto received, The fact that from four hundred to five hundred fowls can by its aid be kept in one building together, with less smell than can be found in any ordinary fowl-house, capable of accommodating a dozen chickens, is very conclusive as to its efficacy. In the building of the National Poultry Company, where this fact has been ascertained, seven or eight fowls are kept in each compartment, twelve feet by three feet, and yet there is no smell or trace of moisture.

Mr. Grevelin informs us that if a much larger number are put into each run the ground becomes moist, ceases to deodorize, and the birds become at once unhealthy. It should be stated that the droppings that fall from the perches at night are removed from the runs next morning, and that the dry earth only receives the manure that falls through the day; this has its moisture absorbed so speedily by the earth that it at once becomes pulverized, mixes with the soil and ceases to smell. So powerful is the deodorizing effect of the earth that it does not require to be renewed in the runs for many weeks together.

It appears a question how far this system may or may not be extended. It is applicable to private poultry houses? Can it be usefully employed at poultry shows? Would it answer in places where it is requisite to keep birds in close confinement? Can it be advantageously used in zoological gardens? The employment of earth closets as a means of deodorizing that which would otherwise become offensive sewage is well known, and we have no doubt that many of our "feathered friends" might be greatly benefitted by an extension of the system that has been so successfully inaugurated at Bromley.—*London Field.*

Points of a Breeding Sow.

S. Lewis, of Boone county, Illinois, gives in the Prairie Farmer his ideas upon the above subject: "In the first place she should be square built, have a short nose and short years, short legs and back, with latter hollow or bent. Shoulders should be heavy and deep. Never let her raise pigs until she is a year old, and never but one litter the first year. Then, if she proves a good milker, let her raise two litters per year. I speak of her being a good milker. This is as essential in a breeding sow as in a good mare. Such an animal will raise better pigs, and, of course, her progeny will be better hogs for the market. I find that hasty pudding and milk for the supper and breakafst, and corn for dinner, constitute a very good diet for the breeding sow. A great many farmers have fallen into an error in not allowing plenty of straw for a bed. Many build a warm pen in order to avoid giving her much straw. Let her run to a straw stack, and she will build a nest to suit herself. If this is not convenient, she should have plenty of straw in the pen. Attend to these matters, and I will warrant no trouble in raising pigs in the coldest weather."

Scientific Farming.

As Solomon condenses the whole duty of man into two precepts—"Fear God and keep his commandments," so the whole business and purpose of farming may be embraced in two maxims, as follows:

1st. To raise the largest possible crops with the least possible labor.

2d. To maintain the fertility of the soil with the least possible exhaustion.

The first of these maxims has commanded general attention throughout the United States, and a rage for large crops at whatever expense of future fertility, have become almost a mania in many parts of the country. The present system of giving prizes at our Agricultural Fairs, if it does not tend directly to produce this state of indifference to the future productiveness of our fields, certainly does nothing to counteract it.—

Who ever heard of a society offering a premium for the best series of crops on the same field for five or ten years? To maintain the fertility of the soil is not only one of the principle interests of the farmer, but it is a duty he owes to those who are to succeed him in his business. Fortunately the two maxims above stated in no way conflict with each other.

The largest possible crop may be produced this year without materially impairing the capacity of

the soil, and repeat the same next year, and each succeeding year indefinitely.

A good soil can be worn out only by criminal neglect and carelessness in its cultivation. In England, fields that have been cultivated a thousand years, are now producing forty bushels of wheat to the acre, and each year marks a slow but certain increase in the crop. The average per acre of crops in the agricultural counties of England has advanced twenty per cent. since the beginning of this century. The same is true of Sweden, and of portions of France, Germany and Belgium. This is to be attributed mainly to the application of scientfic principles, pointed out by Sir Humphrey Davy in England, Sheele in Sweden, Bousingault in France, and Liebig in Germany. While this is true in the old world, how have we fared in this country? If we take the census of 1840, and compare it with that of 1860, we shall discover while the aggregate production has greatly increased, the average per acre has been constantly diminishing. Between 1840 and 1850 this was true of all the States in all the principle crops cultivated; but between 1850 and 1860 several of the States nearly maintained their average, while one of them, Massachusetts, and several counties in others, show a small advance.—PROF. R. T. BROWN—*Northwestern Farmer*.

Dressing Poultry for Market.

The following hints on poultry-dressing are gathered from a circular lately issued by Morrison, Taylor & Co., of this city. The instructions are so thoroughly practical, that we believe we will be consulting the interests of such of our readers as are in the habit of marketing fowls, by giving them a place in our columns.

"We would here remark that 'scrawling' poultry always sells low in this market, and that between a well dressed fowl and a poorly dressed one, the difference in price will make a fair profit, 1st. Food in the coop injures the appearance and sale, therefore, keep from food twenty-four hours before killing. 2d. Opening the veins in the neck is the best mode of killing.

If the head be taken off at first, the skin will recede from the neck bone, presenting a repulsive spectacle. 3d. most of the poultry in this market is "scalded" or "wet picked," "dry picked" is preferred by a few, and sells to a limited extent only, at full prices. Poultry may be picked dry, without difficulty, if done without delay after killing. The bird, held by the legs, should be immersed, and lifted up and down in the water three times. Continue to hold the bird by the legs with one hand, while plucking the feathers with the other, without a moment's delay after taking out. If skillfully handled in this way, the feathers and pin-feathers may all be removed without breaking the skin. A torn or broken skin greatly injures the appearance. 4th. The intestines should not be "drawn."

After removing the feathers, the head may be taken off, and the skin drawn over the neck bone and tied. This is the best method, though much comes to the market with the head on. 5th. It should next be "plunged," by being dipped about two seconds into water, nearly, or quite, boiling hot, and then at once into cold water the same length of time. It should be entirely cold, but not frozen, before being packed. 6th. In packing, use clean hand-thrashed rye straw. If this cannot be had, wheat or oat straw will answer, but be sure that it is clean and free from dust. Place a layer of straw at the bottom, then alternate layers of poultry and straw, taking care to stow snugly, back upwards, legs under the body, filling vacancies with straw, and filling the package so that the cover will drive down very closely upon the contents, to prevent shifting on the way. Boxes are the best packages, and should contain from, say, 150 to 300 lbs.—*Canada Farmer*.

Raising Stock.

A correspondent of the Utica Herald sends the following sensible hit in regard to raising stock: "Every breeder of mules knows that a good horse colt cannot be expected from a mare that has borne mules. The common theory of this is that the blood of the mare becomes permanently affected by that of the fœtus, giving mulish characteristics to her subsequent progeny. Applying this to the cow, is it not likely that the blood of the cow is permanently tainted when she is made to bear bad blooded calves? And can farmers expect ever to raise good stock from cows to which, for the purpose of making them milkers, they have been in the habit of using any runt of a bull they could pick up?"

WASH FOR BODIES OF FRUIT TREES.—One ounce of copperas to eight or ten gallons of water forms a good wash, and is advised for trial as a preventive against blight. One pound of bleacher's soda and one gallon of water forms a wash that cleans off all insects, and leaves the trees with fresh, young looking, healthy bark.—*Horticulturist*.

Agricultural Machinery.

The farmers of our Eastern States, compelled to till rocky and uneven lands, and used to small holdings, do not know by experience, all of the changes which *improved machinery* has wrought in agricultural operations on the great Western prairies. There, machines do the labor of men to such a degree, that the farmer's heaviest toils are lightened, and one man is enabled to achieve with ease, the work of half a dozen.

We saw recently, a corn-field of one hundred and sixty acres, on the "Grand Prairie," in the plowing, planting and cultivation of which, no man walked a step. A rotary spader drawn by four horses, and driven by a man upon the box, plowed the field to a uniform depth of eight inches, and gave such thorough tilth that it was not necessary to use a harrow at all. A corn-planter drawn by two horses, and driven by a man upon the box, next planted seed. A cultivator drawn by two mules, one walking upon each side of the knee-high corn, and driven by a man upon the box, completed the culture of a row at a single operation; and in the tool house lay another machine, also to be drawn by horses, which will cut down the corn when it is ripe, and lay it in regular rows, to be finally gathered by hand. But it is expected that by next year this machine will be so improved as to gather up the corn also.

When it is remembered that the farmer who follows the common plow or cultivator during a long summer's day, performs a march of from ten to fourteen miles, it will be seen what a boon is the machinery which relieves him from this toil. And when we remember how scarce were men during the last four years in the West, we shall see that but for such labor-saving implements our vast crops of cereals could have been neither planted nor gathered.

The farm of which the corn-field we speak of was a part, has seven hundred acres in a single field of timothy. Of what use would this be if it had to be cut by hand? But a half-dozen harvesting machines sufficed to cut it all in good time; and it will do without 'groaning," the work of half a regiment of men; patent horse-rakes, gather it up, and two hay presses upon the place, squeeze it into bales fit for shipping. Seventeen and a half miles of board fence enclose a little more than half of this farm, which has as part of its furniture, comfortable sheds for 10,000 sheep, a rat-proof corn crib holding 15,000 bushels of corn, and extensive stabling for horses.

What machinery has thus done for the West it will do for the South, now that free labor is substituted for that of slaves. We see no reason why the cotton and sugar fields of a great part of the South should not be tilled by machinery. These fields are—in Louisiana, Mississippi, and indeed in almost the whole of the cotton and sugar region—level and devoid of rocks; and these are the only conditions necessary to the successful use of the most valuable farm machinery. The slaves, ignorant and careless because they had no interest in the work, used only the rudest and clumsiest tools; but in the hands of intelligent freedmen, the rotary spader or steam plow, or cultivator, can be used as well on the immense level bottom-lands of Louisiana, where sugar is grown, as on the prairies for corn and wheat.

Yankee ingenuity, too, will presently set itself to work to devise new implements for the more economical and rapid prosecution of such labor as cotton-picking and cane-cutting. The next ten years will witness an immense revolution in the methods of cultivating the great staples of the South, and the fruits of that change will be a greatly increased production of cotton and sugar by the help of free labor, and—what the use of machinery always brings with it—such increased rewards for intelligent labor, as will prove, even to the most ignorant of the southern population, the importance of schools, and the pecuniary value of Education.—*N. Y. Evening Post.*

☞ Wm. Griffith, of North East, Pa., in a letter to the *Country Gentleman*, says: "To the thousands of growers and lovers of choice grapes, the *best and fairest* of all fruits, I will here beg leave to state, that my family have for many years enjoyed the luxury, (are they not a luxury?) of luscious grapes, from November to May, picked, handled and packed in the manner already described, and kept in an out-house, (carriage-house,) until the frost of winter becomes quite severe, (they must not be allowed to freeze,) when they are removed to an unoccupied airy room in the house, where they remain through the winter—save that during a few of the coldest nights, and some few days if the cold be quite severe, they are placed in the corner of the dining-room, or some other room where they are not injured by high temperature. Wheat or buckwheat bran, sawdust or cotton batting, may be employed in packing the grapes, *without wholly destroying them;* but I recommend keeping these damaging absorbents in separate boxes, and if *convenient,* in separate rooms."

A silver chain around a dog's neck will not prevent his barking or biting.

The American Farmer.

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Arrangement of Fields.

CONTINUED FROM OCTOBER NUMBER.

While the *four*-field system commented on in our last number, is inconsistent, apparently, with well-established theories, it has been eminently profitable in practice. Just the contrary must be said of the system recommended by John Taylor, in his, *Arator*, a book famous in its day; and his too, was a four-field system. He was the earnest advocate of what he called "improvement by enclosing." By this he meant the shutting up his fields during two years of the four; allowing no stock to come upon them, but having all the growth of the two years to perish on the ground. That this was better for the land than what he called the "execrable" three-shift system for which he proposed to substitute it, may not be denied. The accumulation of vegetable matter, and covering the surface for two years, instead of one, must add materially to the stores of plant-food. But after all, the result in crops, being one year of corn and one of wheat, rye or oats, was not eminently remunerative; and the natural growth, which should afford fertilizing material, was not of a character to satisfy the wishes of an improver. Weeds which would leave nothing but indigestible woody matter, while they sowed broadcast millions of noxious seeds; and grasses which, while yielding little in bulk, took such tight hold upon the land that it was the work of years to eradicate them, were not very promising elements of success. The corn might be a good crop, but the wheat, growing poorly always after corn, had now the crop of weeds from the abounding seeds to contend with, and worse still, the tenacious blue grass. Both evils increased in magnitude as the land grew richer, and as time allowed seeds and roots to accumulate in the soil. One year's cleansing cultivation in corn was not sufficient to prevent this increase of evil.

INTRODUCTION OF CLOVER.

When the clover culture came in, and was considered indispensable in an improving system, this condition of the ground, which was bad enough as to wheat growing, became altogether unbearable. Clover refuses absolutely to grow in a soil foul with the undigested remains of other plants. When we would have had it take the field after wheat the attempt was a failure. Thorough cleanliness was a *sine qua non*. A system, therefore, which gave ample rest, and abundant returns of vegetable elements, and seemed to comply with all the demands of an intelligent theory, failed. It did not work well in practice. But when a cleansing cultivation allowed the introduction of clover, when in the same number of fields a third crop was taken in four years, much heavier than the others, and usually considered, with the exception of Indian corn, the most exhausting of all, we have, with this additional draft upon the soil, a simultaneous increase in its power of production. The practice became most successful when the common theory would have objected that the land was being exhausted by overworking. It was improving fastest, in fact, while giving most crops.

The explanation of this is that the rapid cropping kept the land in order for clover. In the working of this system, neither weeds nor blue grass have any opportunity to establish themselves. The clover gathers more fresh material from subsoil and atmosphere in six months' growth of its second season, than the native plants would accumulate in two years. As soon as it reaches perfection, having in the meantime had entire possession of the ground, and just at the point when the native growth would begin to take possession, the plow comes in and turns down all that is left. The clover stems being very perishable, present no such impediment to the wheat crop as other plants of the same bulk would, and soon become incorporated with the soil. The *rag-weed*, an annual which always follows wheat, leaves upon the ground a large amount of vegetable matter, which, like the clover stems, is very destructible. It occupies the field from harvest through the following fall, and is finally plowed under in the preparation for a corn crop. The obnoxious natives have been kept in check, and the cleansing culture of the corn crop has put

the land in thorough order for the clover, which is sown with the succeeding crop of wheat.

The value of clover is strikingly illustrated in the difference in results between the four-field system of John Taylor, and that which prevails now. The former yielded two crops in four years, and left the ground foul with an accumulating evil of noxious weeds. The latter takes within the four years another crop, superior in profit to either of the others, and leaves the ground clear of weeds, and at a higher point of productiveness.

This difference in results exposes, too, the folly of the old notion that land needs rest. The more crops produced the more it is capable of producing, if so managed as to give it ample food. The necessary working of frequent crops puts it, physically, in that condition in which it profits most by absorption of fertilizing elements from the atmosphere, and in which its own material is operated upon and made available by atmospheric agency.

FIVE FIELDS.

Notwithstanding what we have said of the profitable experience of those who have practiced the four-field system with clover, we should be tempted to guard against any risk of ultimate failure by a change in one point. We should make the four fields five, and sowing timothy seed with the clover, take a crop of timothy hay, when we now take wheat, and have this follow immediately after the timothy. The year devoted to clover might, in this case, be a year of pasturage, and thus allow a very considerable addition to the stock. This stock would, advantageously, consume the large quantity of straw and corn fodder, otherwise entirely lost except for manure, and thus bring a large extra item of profit. If to this stock the corn be fed as it should be, the manure would be greatly increased in value, and the fertility of the soil proportionably improved.

The only objections that could be made to this change would be that the additional year given to grass might allow the native grasses to multiply to the prejudice of the clover; and that so old a sod might be unsuitable to the growth of wheat. These would be very material objections should they be realized in practice. The whole profit of the system is based upon the success of the clover, and that must be made secure at any rate; and the wheat crop on the clover fallow is the chief money crop, and deserves to be especially regarded.

As to the effect upon the clover, we think that a well-set sod of clover and timothy would, during two years, so completely hold possession of the ground as to exclude entirely all intruders, and that the intermediate workings between these and the next sowing would be sufficient to put the ground in a good state of preparation. As regards the wheat, assuming, as said above, that the clover and timothy will exclude native grasses which might prove hurtful to it; and being well assured that the sod of timothy which would prevail when we break the ground for wheat, is very congenial to that crop, we apprehend nothing on this score. It is said, indeed, to make a preparation for wheat, only inferior to clover, and, in this case, the good effects of the clover growing of the previous year are added to the good qualities of the timothy sod. Such a sod, it has been asserted, is especially advantageous on lands liable to heaving under the influence of frost. Wheat is said to be under no circumstances so secure against "winter-killing." No soil in the world is so uncertain as that of the prairie on account of winter-killing. Yet the early settler raises wheat on the original tough sward with very uniform success; so it is maintained that the sod of timothy is, in this respect, very favorable to wheat. Under the influence of these opinions we should be tempted to seek the advantages offered by the extra grass crop, and make at least a fair trial of five fields instead of four.

THREE FIELDS.

The system which has prevailed in the tobacco-growing region is a three-field rotation. In this, the plan of operations was adopted with reference to the requirements of the staple crop. There was no reason why the four-field system should not still have been practiced, but the fact that the most important periods of the wheat crop come when tobacco most demands attention. This system may have been indeed still more successful with tobacco than corn, because it is a more thoroughly cleansing crop. With the very nice cultivation that it demands is combined the dense shade of the later period of its growth, destroying every vestige of the natural grasses, and making a better preparation for wheat and clover than could be made by the corn crop. But the time for preparing the fallow for the main crop of the four-field plan, is the month of August or September, just the most engrossing period of the tobacco cultivation; and the time of harvesting this crop, the month of July, when both tobacco and corn need close attention. The one field of wheat is, therefore, as much as can be well managed with a full crop of tobacco on hand. The seeding of this field is a comparatively small affair, being done after the tobacco is

taken off, when the ground is already in the best condition for the seed.

This rotation embraces corn and tobacco in the first year. That is, there being three fields, only the best portion of a field is given to tobacco, and the remainder to corn. The tobacco is followed by wheat, and the corn by wheat, if thought capable of producing it. Since the introduction of guano and other fertilizers this is much more common than formerly. If not wheat, then rye or oats would take its place. The faults of this system, under the operation of which there has been less improvement than any other, and in some sections great deterioration, is not in the shortness of the course, as at first might be supposed. The preparation for corn or tobacco, beginning in the spring, and the crop of small grain, coming off in July of the following year, only about fifteen months of the thirty-six are consumed in the growth of exhausting crops; twenty-one months are occupied by the improving crop of clover. However "execrable" such a system without clover may have been, as pronounced by Taylor, with clover, it cannot be thought otherwise than ameliorating. Nor is its failure to be attributed, as is too commonly done, to the exhausting character of the tobacco crop. It is not found in practice to leave the ground exhausted; there is scarcely a crop known to us that does not flourish immediately after it. It returns, in the stalks and other waste, a large proportion of its bulk in valuable manure; a somewhat careful estimate has put the value of these returns from four acres of good growth as equal to that of a ton of Peruvian guano. When it is recollected, too, that no seed is allowed to ripen, except on a few plants, and that its broad leaves gather, necessarily, much from the atmosphere, we may understand how mistaken is the common opinion as to the very exhausting qualities of this crop.

The difficulty lies rather in its engrossing character. It commands, in the first place, nearly all the available manures of the farm. It selects the best portions of the lands and requires the manure to be placed here instead of on those parts which most require its aid to put them in a condition to improve by a growth of clover. It so occupies the labor of the farm that very little time can be given to gathering materials for manure, or to other methods of improvement. The fault then, is not in the system, or in the character of the plant. It is in the management which aims at very large crops of tobacco—improving the tobacco ground, and working it in a manner truly admirable, but leaving everything else to take care of itself under the "execrable" system of those fields without manure, and for want of manure to start with, without clover. The fertilizers of the markets have, of late years, in very great measure, supplied this defect; enabling the farmer to get a growth of clover upon these out lands, and at the same time an increased crop of grain sufficient to pay their cost.

Another great fault, not of this rotation, but of the management associated with it, was the failure to make independent provision for the necessary working stock. It was to be pastured exclusively on these fields, early and late. Nor was this all. The constant temptation to add a little to every class of stock, now a promising colt, now a calf, then a few lambs, and worse than all, a silently increasing stock of hogs, not only eating, but rooting out the substance of the land, were the common features of this system.

The temptations attendant upon tobacco growing are like those which attend its consumption, temptations to excess. Our weaknesses follow us in our pursuits as in our pleasures, and whether we cultivate too largely or smoke in excess, the consequent evils are attributed to the nature of the vile "weed." We think that in both cases the "weed" is a good thing when wisely used.

Pure Air for Feeding Cattle.

A writer in a New England Journal deprecates, even for that stern climate, what he calls the "new-fangled notion" of having tight stables for cattle. He thinks it a great mistake, because he has found by observation, that they do better, ordinarily, in open sheds, or in a house imperfectly, that is, not tightly, boarded. So the idea was, some years ago, very common with tobacco planters, that their crops would cure better if hung in sheds or houses slatted, instead of tightly weather-boarded. In both cases, a plenty of fresh air was needed, and the error, so far as it was one, was in supposing that there was no way in which a sufficiency of air could be had without the degree of exposure which is injurious to the cattle in the one case, and the tobacco in the other.

As regards the latter, nothing is clearer than the importance of a free circulation of dry air throughout the house, while curing, and the slatted siding effects this purpose. But, even while curing, it is sometimes desirable to exclude the air for a time, if it be very damp and warm; and, after curing, then it is well to exclude it as far as possible, the changes of weather being injurious to it as it as it hangs in the house. More

judicious managers have, therefore, so arranged their houses, by hanging on hinges an occasional plank of the weather-boarding, that the air is freely admitted through these and the doors in all good weather, and shut off when it is desirable to do so.

So as regards cattle, it is probable that most of us have remarked the superior thriftiness of cattle not much cared for in the way of protection over such as may have been stabled. Yet we may be very sure that warmth is favorable to the growth and fattening of stock. But if while we keep them warm, we give them slow poison in the shape of foul air, we may be sure they will not thrive. This happens to be too generally the case. On the other hand those which are habitually exposed to the open air are never so poisoned.

The extra cold they have to endure is counteracted by the excess of food which they consume—for they usually have free access to straw or hay, or corn-fodder. Each animal has within him a furnace in which this excess of food is burned to keep up the temperature of the body. He, therefore, if he can get quiet enough to supply fat and muscle, as well as fuel to keep him warm, may do very well so far as his health and comfort is concerned. But his master must look well lest he find the fuel furnished very costly, or lest it appear that the fat laid up in store in the fall has been drawn upon to keep his furnace in active operation.

The true economy of this case would be to have the cattle stables perfectly comfortable as regards warmth, yet perfectly well ventilated. This is especially necessary in cases of feeding with costly food for the rapid increase of flesh and fat. In order to secure perfect ventilation, let the opinion of an experienced architect be taken for some permanent arrangement, which will not depend upon the opening and closing of doors. There should be enough fresh air constantly introduced without allowing it to blow directly upon the animals, which are more liable to colds in proportion to their habitual comfort.

But cleanliness and pure air will depend still upon the internal keeping of the stables as regards the litter and droppings of cattle. The very attempts to preserve cleanliness are frequently the means of keeping the air foul, for the continued removal of excrement leaves the surface to dry by evaporation, and the air is kept in a state of continued pollution.

We can but think that the best remedy for this, as well as the best mode of management for the comfort of the animal and the convenience of the feeder, is what is called in England "box-feeding." This consists in keeping each animal in the stable in a box or pen some ten feet square, where he is at liberty to move and turn at pleasure; the animal to be well littered daily, and the dung not removed till the end of the season, if possible. It is alleged that, under the weight of the animal the manure becomes so well tramped that fermentation does not take place in any mischievous degree, and at a low temperature, such as we have during the winter, not at all; hence there is no loss or damage to the manure, and the expense is saved of daily cleaning the stables.

It has been found that from fifteen to twenty pounds of straw daily is sufficient to keep the animal clean, and to absorb the liquid part of the manure.

With this treatment there is little foul air generated, and no escape of ammonia, as there is no fermentation; the animal is kept dry and warm, and quiet; for he has always a good comfortable bed, and no disturbance of whatever sort. It is true, it requires much stable room, and an abundance of litter. On grain farms of any extent, the latter is no objection, for it is an object to convert the straw and litter into good manure.

In the spring the manure goes out as long, unfermented manure, and may thus be thrown on the grass land; or those who want it rotted, can throw it then into heaps for fermentation. It will be of the very best quality, having lost nothing by premature evaporation, or by the washing of rains, and being enriched by the character of the food given to stall-fed cattle.

Origin of Petroleum.

The question of the source of petroleum has been frequently discussed, but no satisfactory solution of the problem has yet been reached. Objections have been urged against every theory hitherto broached, and it must be admitted that this substance still remains a mystery.

The distinguished French chemist, Barthelot, has made a new suggestion, which has, at least, the merit of originality. Assuming that the interior of the earth contains the alkaline metals in a free state, he finds the carbonic acid everywhere present on the crust of the globe, capable of producing these oily substances. The first action is the formation of a peculiar substance, acetylene, which is always generated in imperfect combustions, by the reducing action of the alkaline metals upon the carbonic acid, or earthy carbonates. This combines with the alkaline metals to form acetylides. When these are decomposed in the presence of watery vapor, they give rise to various oily and tarry matters, such

as Barthelot has shown to result from the action of heat upon the substance in question.

If these speculations are well-grounded, there is no necessity for supposing petroleum to have resulted from the destructive distillation of coal, or vegetable matter, and the still wider diffusion of this remarkable body may be looked for. It must be borne in mind, however, that its author put this notice forward as a mere suggestion, and not as a well-digested theory.

Book Table.

THE AMERICAN JOURNAL OF SCIENCE AND ARTS. Conducted by Professors B. Silliman, and James D. Dana, in connection with Professors Asa Gray, Louis Agassiz, and Wolcott Gibbs, of Cambridge. And Professors S. W. Johnson, George J. Brush, and H. A. Newton, of New Haven. Published the first of every second month at New Haven, Ct. Price *Six Dollars* per year. We are in receipt of Nos. 124 and 125, July and September. The names of its editors leave us nothing to say as to the character of this Journal, so long and well known by scientific men throughout the country.

AMERICAN QUARTERLY CHURCH REVIEW, conducted by N S. Richardson, D. D., No. 37 Bible House, Astor Place, N. Y., price $3. This very able Quarterly should be in the hands of at least every Protestant Episcopal churchman, who would fortify himself in the truths of his own faith, and inform himself thoroughly on the points which separate him from the Roman Catholic Church on the one hand, and the numerous Protestant denominations on the other.

LONDON QUARTERLY AND BLACKWOOD.—We are indebted to the Leonard Scott Publishing Company, 38 Walker street, New York, for these valuable re-publications. These famous reviews abound in magazine reading of the highest order, and should take the place of much of the trashy material of the same sort, originating in this country.

☞ We have to thank the publishers, Messrs. T. Ellwood Zell & Co., Nos. 17 & 19 S. Sixth street, Philadelphia, for a copy of "Mackenzie's 10,000 Receipts," containing a vast amount of useful and interesting information; many of the receipts being alone worth much more than the price of the book. 8 vo., cloth, gilt, 469 pages.

OHIO STATE AGRICULTURAL REPORT FOR 1865.—We acknowledge the receipt of this report, though too late for examination. It is a handsome volume of more than 400 pages.

DISEASES OF THE AMERICAN STABLE, FIELD AND FARM YARD, by Robert McClure, Veterinary Surgeon, Philadelphia, is received too late for examination and notice this month.

DR. JOHN O. WHARTON.—The numerous friends of this gentleman, and it is rare that any man has so many, will be sorry to learn that he resigned the office of Register of the Maryland Agricultural College at the last meeting of the Board of Trustees, to take effect on the first of November, and that he proposes to move to the State of Mississippi, where many members of his family are now residing.

Dr. Wharton has been, for more than thirty years, prominent among the public men of the State, and always one of the most zealous friends of whatever he deemed calculated to promote its agricultural interests. He was one of the projectors of the Maryland Agricultural College; one of the original corporators, and one of the very few, to whose earnest determination, it owed its origin. In the responsible and influential position of Register, he has given to it many of the best years of his life; serving it always with an energy and devotion, which grew out of an earnest conviction of the benefits to the agricultural community, of which such an Institution is capable. In leaving it, and the State, he carries with him the regrets and heartiest good wishes of a host of friends, whom his genial manners and warm heart have attracted, and his truth and genuine worth have attached to him.

THE MARYLAND AGRICULTURAL COLLEGE.—We spoke with some confidence, in our September number, of the probable reopening of this Institution about the first of October. Our anticipations were too sanguine. At a meeting of the Board of Trustees held in September, too late for notice in our last number, it was not deemed expedient to open again earlier than the first of January. We learn now that it is definitely determined to commence operations again with the new year, and that another meeting of the Board will be held on the twelfth of November, to elect Professors, and perfect the re-organization.

FINE GRAPES.—Mr. David Miller, of Carlisle, Pa., has sent us by express a box of Concord grapes, which we found to be of very superior quality. They are not so large as those noticed last month, but quite equal, if not superior in other respects. See his advertisement.

State Agricultural Society.

Having had numerous applications from gentlemen in various parts of the State who were members of the MARYLAND STATE AGRICULTURAL SOCIETY, to call a meeting with a view of taking steps to its re-organization, and believing that the time has come to organize an Agricultural Society, I respectfully request all gentlemen in the State, favorable to the organization of a State Agricultural Society, to meet at No. 67 *West Fayette street*, in the city of Baltimore, on WEDNESDAY, 14th OF NOVEMBER, next, at 12 o'clock, M.

JOHN MERRYMAN.

Hayfields, Oct. 20, 1866.

Just as we are closing up our matter for this month's issue, we have received the above which speaks for itself, and which we have only time to commend to the favourable response of our Maryland readers.—ELS.

Gleanings from October Number of "Horticulturist."

Grape Cuttings.—Made as soon as the foliage of the vine drops, and planted out in well-prepared land, will start early in the spring, and make a stronger and better growth, than when made during winter and planted out in the spring.

Cause of Rot in Grapes.—In the discussion at the Lake Shore Grape Growers' Association, the cause of disease, rot, &c., was ascribed in a great measure, to *permitting the vines to overbear*, and thus reducing their vitality, and ability to endure extreme changes of temperature.

Seedling Grape Vines, Magnolias, and Ornamental Shrubs, should be protected the first winter. Many are destroyed the first winter that would otherwise prove hardy.

Norton's Virginia Grape.—Mr. Husmann does not say too much in praise of this grape when it can be successfully ripened. It makes a wine heavier than the best clarets, and approaches more nearly to Port, than any other with which I am acquainted. To those about to engage in vine-growing in our Southern States, especially in Tennessee, it will prove of the greatest value.

Basket Layers.—When properly managed, basket layers may be made to do much better than common layers of the same size. A good shoot from an Isabella vine, layered by the end of May, in an old half-bushel basket, separated from the parent plant by the middle of August, and removed on the fifth of September to its permanent location, ripened its wood so perfectly, that two arms of four feet each, (which had been grown while the layer was attached to the present vine,) were laid in at the winter pruning. Next year their arms threw up twelve vigorous shoots, all of which would have borne fruit if allowed to do so. But the fruit blossoms were all removed, as soon as they showed themselves, and the second season, each alternate shoot bore a full crop of grapes, without injury to the vine.

The great advantage to be derived from the use of baskets, is the facility it gives of transplanting the vines before they were done growing. A plant layered by the end of May will begin to throw out roots early in June. By the first of August these roots will have filled a large basket; if now, by the middle of August, the layer be placed upon its own resources, the roots and wood will ripen thoroughly. Remove the plant by the first of September to its final resting place, and the roots will not only heal up all their injuries, but will send out multitudes of new fibres, and the vine at the close of the season is equal to a good, healthy plant that had been set out in the previous spring, and had grown without check the whole season. *And it is not a whit better.* The great advantage to be derived from basket layers, lies in the fact that they can be transplanted so early in the fall, as to secure what is virtually equivalent to an extra year's growth. This, and this alone confers upon them their superiority to common layers or cuttings.

Purchasing Trees in the Fall.—We advise all tree planters, whether near, or far from a nursery, to purchase their fruit and ornamental trees, except evergreens, in the fall. If the ground is not ready for planting before the first of winter sets in, then select a dry place, if possible, shaded from the sun, and heel them in carefully. There are often times in winter when planting out may be done to great advantage; and, by having the trees on hand, the work can be performed leisurely and carefully.

The Kittatinny Blackberry.—This Blackberry promises to be more desirable, both for market and family use, than any other variety. It is stated to be as large as the Lawton; to ripen earlier, and continue longer, and to bear equally as well, if not better; the canes perfectly hardy, and the fruit sweet and high flavored.

BLOODY MILK—CAKED UDDER.—J. D. Churchill writes to the *Rural American* that the best remedy he ever saw for bloody milk or caked bag in cows, consisted of half a teaspoonful of saltpetre given once a day for a week.

Gleanings from the Gardeners' Monthly.

The Roger's Hybrids.—John M. Ives, of Salem, Mass., says: Of all the grapes that have come under our notice during the last four years, we have seen none to equal, taking into consideration all desirable qualities, the grapes known as Rogers' Hybrids, raised by E S. Rogers, of Salem. His experiment in Hybridising has proved, and set at rest, a subject which has been some time in dispute among horticulturists and botanists. Mr. Rogers has given to the country varieties of hardy grapes; the most valuable of any heretofore known for this latitude, and also for more southern ones. These varieties, some forty or more, were produced by hybridising one of the best and earliest wild grapes, belonging to the species, *Vitis Labrusca*, with two of the earliest of the foreign species, *V. Vinifera*, known as Black Hamburg, and White Chasselas; and the change from the wild type in the new seedlings is immense, and apparent to the commonest observer; the new varieties having more of the foxy odor, peculiar to the native parent from which the seed was taken, and resembling in size, color, and delicacy of fruit, the foreign, and the berries like this species having the property of not dropping.

Mr. Rogers, knowing what was wanted, chose the wild variety on account of its hardiness and earliness, (in preference to the Isabella,) for the mother of the new variety; and for the male parent, the two hardiest of the foreign species, viz: the Black Hamburg, and the White Chasselas; and from these two species have come numerous valuable varieties, possessing many of the qualities desired; and such as hardiness of vine, earliness, and delicacy of fruit. These grapes are sent out by numbers: No. 15 has ripened four or five years in succession, where many other much praised kinds have failed. There are many other varieties, as Nos. 1, 3, 4, 9, 14, 28, 30, 33, 41, 43 and 44, which are thought nearly equal, and some quite as good. These are all earlier than the Isabella, and many of them earlier, larger, and much superior to the Concord in quality. Some of these grapes are considered equal in quality to many of the foreign sorts from under glass, and the most promising we possess for outdoor cultivation.

Soil and Manure for the Grape.—The best and most natural soil for the grape, is dry porous limestone. It should be well drained. Cold and wet situations are unfavorable for the vine. In manuring for the grape we should *never* use animal manures uncomposted. The mineral manures, in consequence of their ingredients, have the most effect on the quality of the fruit, while animal matter encourages the formation of wood too fast, and makes the vine tender, and subject to disease and mildew. Bone dust contains the most nourishing elements, with ashes and lime. These, with a good surface soil, well covered in the fall with dry leaves, are nearly all the materials necessary for the vine.

Keeping Apples—D. W. Adams, Wawkon, Iowa, says: In localities where the winter is sufficiently cold and *steady*, apples may be frozen up, perfectly solid early in winter, and remain wholly dormant, and consequently exempt from decay for three or four months. I am unable to discover that freezing injures in the least the flavour, texture, or keeping qualities of apples; if they are thawed very slowly, and in a situation where *air* and *light* are excluded. They are not damaged by any kind of transportation while hard frozen.

Root Pruning and Removing Large Trees.—The Editor says, that George Lee, of Cliveden, an English fruit grower, whose "bread and butter" depends on his success with his fruit trees, has two thousand trees of apples, pears, cherries and plums, which he lifts and removes every year. He has done this for many years, and he continues to do it, because he finds that it pays him handsomely in a profusion of magnificent fruit. He commences with one or two year old trees. The first time or two of their removal, he says, they have their growth checked, but subsequent removals do not seem to put them back any. In a recent paper published in the April No. of Transactions of the Royal Horticultural Society, he gives a list of varieties which have been under this treatment from 10 to 15 years, with their heights, "spread," and diameter of their trunks. Of pears, Doyenne d'Ete, 10 years planted, nineteen feet high, and with a stem eighteen inches in circumference, Beurre, Diel, Boussack, Urbaniste, and others, exhibit about the same proportions. Apples 12 years planted, twelve to thirteen feet high, with a "spread" of six to seven feet, and stems sixteen inches in circumference. These are all on what are called standard stocks, though the trees are grown as Pyramids. Dwarfs do, generally, just as well, and bear earlier, hastening the profits of the fruit garden. Mr. Lee has successfully moved pear trees that were twenty-five years old, and three feet in circumference, that had never before been moved.

The method he practices in removing, recommended also by the editor of the *Gardener's Monthly*, is, for a tree twenty-five to thirty feet

high, to dig a circle eighteen inches wide, ten or twelve feet from the tree; then dig and throw the soil out, at least two feet deep with the spade; a digging fork only is afterwards used, and the tree undermined, and the soil all carefully taken out from among the roots, by gently shaking them with the fork, and letting the earth fall into the undermine. The old notion of taking up a ball of earth with the tree is treated as absurd. The object being to get all the roots, and leave all the earth, instead of taking up a large ball of earth, and leaving the greater portion of the roots behind.

Mr. Lee's practice spoils the illustration of Dr. Franklin, when he says:

"I never saw an oft removed tree,
Nor yet, an oft removed family,
That throve as well, as those that settled be'

The rationale of the matter is, that it being only the ends of fibres that draw up nourishment to the plant, by cutting back a little, one root with one point, is made to throw out fifty roots with fifty points, multiplying fifty fold, the acquisitive powers of the tree.

Cold Graperies.—The editor grows indignant over those who seek for advice, how to make "ærated, divided, and double-distilled grape borders," and want information about "bones, hair, lime and plaster, carcasses of hogs, horses, swine, and asses, and the concentrated essence of a score of fertilizers," and are seeking generally "to expend the greatest amount of money, on the smallest proportionate crop of grapes." He finds that the more care and expense bestowed on grape houses and grape borders, the more indifferent is the crop, and thinks that hundreds are deterred from having vineries, because they have seen so much spent for so little The material for a grape border recommended, is "one-fourth rotten stable manure, cow dung preferred; one-fourth of coarse, sharp, road sand; two-fourths of turfy sod from a pasture all mixed up together."

Quince Cuttings.—These generally fail when put in, in spring, but rarely if set in the fall, and the earlier the better. Throw coarse litter over them, to keep them from being thrown out by thawings in winter.

Milk Fever in Cows.—I observed an enquiry in the *Ohio Farmer* for a remedy for the fatality of cows after calving. The best remedy I know is to give two quarts of strong hop yeast just before calving, and afterwards give two quarts three times a day for two or three days; then if the cow seems well, taper off by giving it once or twice a day. It may be given in a little wheat bran. It is necessary to milk the cow for some days before she has her calf, in order to prevent throwing her into a fever, especially when high in flesh, and running on pasture.—W. B., *Guernsey county, Ohio.*

The Silk Business in California.

It is definitely settled now that experiments in the production of silk are to be made at San Jose, on a scale sufficiently large to test the question whether the business can be made pay. It is known that silkworms will thrive there, and that the climate is far more favorable to them than those of Italy, France, China and Japan—the principal silk countries of the world; but the price of labor is so high that capitalists have been unwilling to risk their money in the enterprise. They feared that the disadvantages in the matter of labor would more than counterbalance all the advantages of climate. Their motive was only a fear, not a belief, much less a conviction; their presumptions were in favor of success. But they would not venture their money on such a presumption. The legislature, however, has come to the aid of the enterprise, and offered rewards for the production of cocoons and the planting of mulberry trees in certain considerable numbers. These rewards secure the silk-grower against loss, while they are so small that the State will not feel the burden. If the experiment succeeds, the business will be at once established on an extensive scale, and silk will become one of the regular productions of the State.

Influence of Railroads on the Hatching of Eggs.—A peculiar effect of the proximity of railroads on the hatching of eggs has been mentioned in some French papers. It has been found that there are scarcely any chickens raised in all those poultry yards which are situated in the immediate neighborhood of the rails of a much frequented road. This fact has been observed in various parts of France, and is supposed to result from the earthquake-like trembling or shaking of the soil caused by a passing railroad train, which exerts an unfavorable influence on the eggs. It would be indeed interesting to learn whether something similar to this has been noticed on this side of the water.

☞ In laying out gardens for fruits and vegetables, place everything in drills or rows, so that they may be cultivated by a horse, and thus save the expense of hard labor.

Feeding Bullocks.

Major George Taylor, a noted feeder of fine bullocks, says regularity in feeding is indispensable. His regular ration to each animal is eight quarts a day of meal made of corn, rye, and oats mixed. His usual practice is to feed coarse hay first in the morning, then dry meal, and then two or three fodderings of finer hay and rowen. After the cattle are well filled, and about 11 A. M., they are turned out to water, and while out the stalls are regulated, cleaned and strawed They are immediately stabled again, as they gain faster shut up, and are expected to lie down, and rest till feeding time again. About 3 P. M., dry meal is given, then one or two fodderings of hay, and lastly stalks, which answers for the night. Every stalk and leaf unconsumed is removed from the mangers between the feedings. Only such quantities and qualities are fed as are likely to be eaten entire and clean. The hay is mostly pulled with a hay hook, in order to draw from different layers of the mow, and thus secure greater variety.—*Co. Gent.*

Some Reasons for Raising Sorghum.

Wm. H. White, writing from South Windsor, Conn., to *The Working Farmer*, says: "The raising of Sorghum can no longer be looked upon as an experiment; for we have the practical results attending its culture for eight to ten years past. Then I would recommend to every farmer to raise a piece of Sorghum. But says the reader, will it pay? This certainly is a very fair and important question, and it is to be well considered. The fairest way of deciding this question is, to compare it with other crops of similar cost in producing.

"The corn crop requires nearly the same cultivation, but is more exhaustive to the soil, so that the two will approach nearer than any other that can be selected. For example, we take the average yield of the two crops in the State of New York for 1864 as reported by the Agricultural Department at Washington. Sorghum averaged 112.5 gallons per acre; and the average price for which it sold was $1.06, which would give as the value of the product of an acre $119.25. The average yield of corn was 29½ bushels per acre, at an average of $1.68 per bushel, or $51.28 per acre. From the product of the Sorghum, should be deducted the price of manufacturing, which in some places is 40 cts., and others only 25 cts. per gallon; we will reckon from the higher, and we have $75.25 as the net proceeds, or a balance of $22.94 in favor of the Sorghum. The labor being nearly equal, no account is made of it; neither of the fodder, as I consider the Sorghum leaves and seed quite equal to the corn fodder. The above average yield is below what I think it should be, as the past season we have produced it at the rate of over 200 gallons to the acre. At the rate of 160 gallons to the acre, which is a fair yield, the farmer who raises his half an acre would receive 80 gallons; and if he chooses, as is sometimes the case, he can give one-half for manufacturing, and still have for 40 gallons left himself without the outlay of one cent in money. Next as to its quality, and how far can it be used in household economy. As to its quality it equals the best syrup molasses we get and may be substituted therefor in many instances, as well as for the cheaper qualities of sugars."

Grape Vine of Santa Barbara.

One of the celebrities of Spanish California is the immense and beautiful grape vine now growing at the Montecilo, two or three miles below Santa Barbara. The planter of the vine was Donna Marcelina Felix de Dominguez, of the earliest expedition to Sonora, before 1780. It was planted by her over sixty-five years ago, from a slip which she cut from the young vineyard at San Antonio Mission, in Monterey Co., for a horse whip. Her husband had got permission to make a small garden near the warm springs of Montecilo, a favourite place for the washerwomen of the new settlement of Santa Barbara, and here she planted it on the edge of a knoll. It immediately took root and began to bud and leaf, and from careful attention before she died, it was made to produce more than any known grape vine in all America, North or South. Between 1850 and 1860 it had been trailed over some 80 feet in circumference, with a trunk of 12 inches diameter, rising clean 15 feet from the ground. Somes years it has borne over 6,000 bunches of ripe and sound grapes, or close on to 8,000 pounds, and become the wonder of every resident or sojourner in that psrt of California. And what is more, for the last thirty years it has principally maintained the old woman and her numerous family.

Prof. Silliman, when he visited it last year, said he had never heard of such an immense grape vine in any other country, which is saying a great deal, as he has travelled much in the south of Europe.—*San Francisco Bulletin.*

A PROFITABLE CROP.—We understand that Andrew J. Schindle and Daniel Baker sold their crop of grapes raised on two acres of land the present season for $1008.—*Hagerstown Mail.*

Southern Agriculture.

BY DR. LEE, OF KNOX CO., TENN.

GENTLEMEN:—Please accept my thanks for the four first numbers of the sixth series of the old "American Farmer" which you have sent me. Never before did Southern agriculture so much need the assistance of its wisest and most devoted friends; for it has received a blow from the sudden emancipation of four million slaves, without compensation, that will give pain, and work evil, for many years to come. Planters in the British West India islands were paid in part, at least, for the loss of their slaves set free by Government; but that measure of partial justice did not impart industry to freedmen, nor prevent flourishing estates going to decay and ruin. It was confidently asserted that free colored persons would produce more sugar for wages as hirelings, than they had done as slaves; and that the offence of slavery being removed, white laborers from Europe would go abundantly to these fertile islands and cultivate them as gardens to the incalculable advantage of the owners of all planting and farming lands. But white laborers have not gone there; nor will they go to the Southern States to raise tropical plants, like cotton, sugar and rice. There is, therefore, great danger that, to the loss of some two thousand million dollars in most active, productive, and reproductive property, an equal loss is to accrue by diminished staples, and the depreciated value of real estates.

If properly sustained, the agricultural press of the South will do much to avert the last named calamity. The study must be how to render land productive and profitable, with the least labor; for negroes are sure to lose by degrees the industrious habits acquired heretofore, when subject to stronger minds than their own, and will become steadily less reliable for all large agricultural purposes as time advances. This deterioration may be lessened by adopting the practice of Mr. Farras, of Georgia, who rises at three o'clock in the morning, and keeps his colored people under his eye all day, to prevent their learning the sweets of idleness, and returning to man's primitive state of pure laziness. The Ethiopean will sooner change his skin and build up a powerful nation of his race, than lose this constitutional infirmity. I am old enough to remember the abolition of slavery in the State of New York, and how generally the freedmen left their agricultural occupations in the valleys of the Hudson and Mohawk, for less laborious employment in cities and villages. Some colored children attended common schools with me; but education never made one of them love agriculture, or become a farmer. Schools for colored children in the South will disappoint their founders. The proper mental culture of white children will pay better. My ideas on this subject are derived from twenty years observation in the South as a writer for the press, a public teacher, and a student.

An intelligent, industrious population is what the Southern States need more than all else, to support schools, build roads, open mines, erect factories, and above all, cultivate and improve the soil in the most skilful and successful manner. If the world understood the natural advantages of the "sunny South" as I understand them, after long and patient study, the voting power of the Federal Government would soon be South of Mason's and Dixon's line. In time, it is sure to come here, and mainly by the attraction of agricultural forces which will not diminish while the earth lasts, and which are as reliable for all industrial purposes as the rising of the sun and the fall of rain and dew. The South is rich in agricultural facts which the world has never considered, because it has never known them. I trust that the old "American Farmer" will distinguish itself by searching out these alike interesting and instructive facts, and giving them due prominence before its readers. Its conductors know something of the character of Mr. Dixon, of Hancock county, Georgia, and will doubtless consider him good authority on an agricultural question. He told me that he commenced planting on the poor piny woods land of central Georgia with only two hands, and in twenty-five years had made a property, which, at my request, was named to me in detail on his home plantation, and I thought it worth $300,000, or more. For the public instruction I was searching for new facts—nothing more, nothing less. It was not the high price of cotton that gave existence to this property; for, twenty years ago, when I first resided in Augusta, cotton sold in that market at five cents a pound; and the average sales of Mr. Dixon, previous to the war, were probably at less than half the present price of cotton in gold. Having only two slaves to start with, slavery did not give him his estate; for thousands of other planters with equal attainments, more slaves, and far better land, have achieved no such results. How, then, did a nearly barren, sandy soil, bought at a dollar an acre, and too dear at that, produce by common tillage, and fair economy, such a property? Simply by *utilizing* plain facts, which too many superficial thinkers, readers, and writers on rural affairs, affect to discredit, and de-

spise. No matter how important an agricultural fact may be, intrinsically, its value is latent until developed by *use*. If you desire an exposition of the facts referred to, you have only to send me the Farmer regularly to obtain them.

Respectfully, DANIEL LEE,
Gap Creek, Knox Co., Tenn.

We hope to hear often from Dr. Lee.—ED.

MIDDLEBURG, LOUDOUN CO., VA.,
September 12, 1866.

GENTLEMEN:—Enclosed you will find $2 for subscription to "American Farmer." In nothing did you show your good sense more than in sending the "Farmer" to your old subscribers, trusting them to send the money when they could. We are not so completely ruined but we can raise two dollars for so good a friend as the "Farmer"—if we did not do it—our wives would.

For the matter of that—I do not agree with your correspondent—who writes from "Arcola," saying, "we are all ruined." He must be a rusty, crusty old bachelor. With such women and lands, in old Loudoun, aye! and such noble men as we have left—how can we be ruined?

In your July number, you had a mode of treatment for foot rot in sheep, worth much more than is paid for one year's subscription. The proportion of lard should have been stated. I used from two to three parts of lard, or butter, to one part of sulphate of copper, following all the other directions minutely, which are very important.

We must turn our attention, not only to sheep, but to grapes, with a view of making wine. I see the Scuppenong highly recommended by J. Van Buren in your last number. Will you please state what are considered the best grapes for our latitude with a view to make wine.

I am, most sincerely, your friend,
WM. B. COCHRAN.

Messrs. Worthington & Lewis.

While the Scuppernong is *the* wine grape of the South, it has been much overlooked and neglected in this, and more northern latitudes. We do not know why, and should be glad to learn from some one better informed. We do not hesitate, with all the information we can get, to recommend the Concord, not as best in quality, either for the table or wine, but for quality, hardiness, and productiveness combined, the most profitable grape for this latitude.—ED.

☞ The number of worker bees in hives is said to vary from 5,000 to 50,000.

Management of an English Dairy Farm.

The London Agricultural Gazette gives the following interesting account of the dairy farm carried on by Lord Granville, near London:

The following are the leading particulars regarding the farm: It is three hundred and forty acres in extent, of which about three hundred are pasture. All this grass land is mown twice. When the cow-stalls are full, holding from one hundred to one hundred and twenty cows, about three-fourths of an acre are needed daily as cut forage carted home, and the whole land is twice cut over in this way between the end of April and the beginning of October; all that is fit for hay being, both in June and again a second time as "rowen" in August, mown and made. The remainder is grazed with sheep during the autumn months, three hundred being purchased for this purpose in September, and sold at Christmas. There are thus about six hundred loads of hay made annually, and of this nearly half is consumed upon the premises and one half is sold. The produce of the land is thus (at an average yield of first and second cuts equal to twenty-six hundred weight of hay per acre) about three thousand tons of grass from the pasture land (of which one thousand tons are sold as hay, leaving two thousand tons to be consumed,) and probably six hundred tons of mangel wurzel and cabbages from the arable land, making two thousand six hundred tons of green food, either succulent or dried as hay, consumed per annum by one hundred and twenty cows, which amounts to about one and a fourth hundred weight daily a piece, (taking both grass and hay into account.) In addition to the produce of the farm, some eighty loads of straw per annum, and one hundred and fifty quarters of grains per week, and probably twenty or thirty tons (two to three hundred weight a day upon an average) of peas, barley, and pollards are purchased and consumed per annum. The cows receive one and a fourth to one and a half bushels of grains in two meals daily—in winter they receive fifteen pounds of hay and thirty pounds of mangel and wurzel, and in summer, grass—about three-fourths of an acre of a crop, equal to thirty hundred weight of hay, sufficing for one hundred or one hundred and twenty cows. In addition to this they receive two to four pounds of meal a day when in full milk, and again when their milk is shrinking rapidly, and when it is desired to fat them for the market. As soon as a cow shrinks to five quarts of milk a day, she is dried off and fattened, and in this way continual purchases of stock are being made

to keep the houses full; one hundred and fifty to one hundred and sixty are annually purchased and sold to keep one hundred and twenty cows in constant milk. Where the state of the market recommends it, the cows are fattened up to nearly their original value when in full milk; at other times they are allowed to go sooner, and the original value is not realized. In two years of which Mr. Panter has been good enough to give us an account, the average price on purchase was £19 17s. and £19 18s. respectively; while the price obtained on sale was only £14 14s. and £13 14s. respectively. This, however, represents a much greater loss than usual, owing to the severity in these years of pleuro-pneumonia and the foot and mouth disease. On an adjoining dairy farm, in 1863–4, about ninety being continually in milk, the cows, kept a shorter time and continually *fed* as well as milked, reached on sale within £1 of their purchase price. But one hundred and fifty-three were purchased and sold per annum to keep a stock of ninety good, so that they could not have been kept longer on an average than seven months each.

In 1862—3, upon the Golder's Green farm, one hundred cows being daily milked upon an average throughout the year, the return for milk sold was £3,900, or £39 per stall. In 1864–5, one hundred and twenty cows being kept, the return was £4,900, or upwards of £40 per stall. In the latter year one hundred and sixty-four cows had been bought for £3,077, or £18 15s. a head, and one hundred and sixty-one were sold for £2,317, or £14 8s. a piece, being a loss of £760 in all, equal to nearly £5 per cow, more than £6 per stall; and it must be borne in mind that the return stated above, amounting to nearly £40 per stall per annum on an average, corresponds to only £30 or thereabouts per cow during the eight or nine months' feeding spent upon her. On the whole, the return in 1864—5 may be stated at £4,140 for about 2,600 tons of grass, 80 loads of straw, 8,000 quarters of grain, and 20 to 30 tons of meal and cake, a large expenditure on labor, and the use of a large amount of capital. The men employed upon the farm and in attendance on the cows correspond to one to every ten cows, and in addition to this there there is the cost of hay-making, let at 25s. an acre, or thereabouts, and the cost of horse labor, including thirteen or fourteen horses in five or six teems. To the receipts from the cows must be added the proceeds, about £300 per annum, from wheat and potatoes grown on the arable land, and some £100 or thereabouts realized from the sheep, together with the price of 200 or 300 loads of hay; and to the expenditure must be added a good deal of extra labor connected with harvest work upon the arable land. The reader will work out the calculation for himself. But keeping to the return in milk for the 2,600 tons or thereabouts of grass, both succulent and dried, consumed by the cows, we make the net profit, deducting rent at £3 per acre, and 5 per cent. upon the probable capital employed, to be about 6s. or 7s. per ton of the grass thus grown and consumed.

Fattening Sheep in Winter.

Winter-fattening of sheep may often be made very profitable, and deserves greater attention, especially where manure is an object; and the instances are few, indeed, where it is not. In England it is considered good policy to fatten sheep, if the increase of weight will pay for the oil cake or grain consumed; the manure being deemed a fair equivalent for the other food—that is, as much straw and turnips as they will eat. Lean sheep there usually command as high a price per pound in the fall, as fattened ones in the spring; while in this country the latter usually bear a much higher price, which gives the feeder a great advantage. The difference may be best illustrated by a simple calculation. Suppose a wether of good mutton breed, weighing eighty pounds in the fall, to cost six cents per pound, amounting to $4.80, and to require twenty pounds of hay per week, or its equivalent in other food, and to gain a pound and a half each week; the gain in weight in four months would be about twenty-five pounds, which, at six cents per pound, would be one dollar and fifty cents, or less than ten dollars per ton for hay consumed; but if the same sheep could be bought in the fall for three cents per pound, and sold in the spring for six cents, the gain would amount to three dollars and ninety cents, or upwards of twenty dollars per ton for the hay—the manure being the same in either case. For fattening, it is well to purchase animals as large and thrifty, and in as good condition as can be had at fair prices, and to feed liberally, so as to secure the most rapid increase that can be had without waste of food. The fattening of sheep by the aid of oil-cake, or grain purchased for the purpose, may often be made a cheaper mode of obtaining manure than the purchase of artificial fertilizers, as guano, super-phosphate of lime and the like, and it is altogether preferable. It is practiced extensively and advantageously abroad, and deserves at least a fair trial among us.—*Robt. Jennings, V. S.*

Mulching Meadows..

It is of the highest importance to the farmer to obtain the best possible yield from his meadows and pastures, in order to carry the stock "all the year round," especially his meadows, that through the foddering months cattle and other stock may be supplied with nutritious food. It is generally conceded, I believe, that good hay—meadow hay is that food—is the foundation-stone of successful feeding. Farmers understand that meadows must be manured in some way in order to maintain their fertility. To show *one* of many ways is my design.

An increased yield of grass may be obtained by spreading dry straw upon the surface of the meadow in early spring—if possible, before the frost leaves the ground. It should be spread very evenly and very thin. A novice must not be put at the work, but one personally and pecuniarily interested.

In the spring of '61, I purchased a farm, upon which was a pile of straw, from which seven or eight hundred bushels of oats had been threshed the previous autumn, and the straw remained as it fell from the machine. Wishing to remove it, I ascertained the poorest part of the meadow, and drew the straw in the first days of April and spread it, not without some misgivings, as I noticed that it gave amusement to my neighbors, who were jocose for the time over "book farming." They prophesied the mower would clog, the horse-rake scratch it up, and that I should have all back in the barn again. Why not make *manure* of it? they said, meaning thereby, let it rot and then scatter it.

The result was far beyond my most sanguine expectancy. The yield was greater than from any other portion of the meadow—and, considering its poverty, which may be understood by the answer given by a farm laborer as to the yield the previous season he said: "There was not enough to wipe the scythe." The reader can draw what inference he pleases.

The present year a similar application was made, with equally good results, upon land of altogether different quality, the former being a clay loam, the last a gravelly soil. These experiments have established a faith not to be shaken, in the benefit of mulching meadows with straw. The question will be asked, will it not be better to allow the straw to rot, and then apply it to the land? I think not; dry straw will spread over at least ten times more surface than when rotted, and the benefits or the reason will be seen in the following statement:

I took whole manure from a pit, both urine and solid matter, and applied on the same field side by side with the straw; the yield (as near as guessing could come) was equal; that mulched was the taller and finely headed, that manured was thickest at the bottom; the bulk upon the wagon equal. To feed to cows, I much prefer the hay from the mulched area; and think the cattle will second my supposition.

To apply straw in the autumn may be beneficial, but suspicions of mice have hitherto prevented, I shall apply this fall late, and again in the spring, and watch results.—*Country Gent.*

To keep Fowls free from Vermin.

There are several kinds of vermin that infest the hen. By attending to the following remedies, they will be entirely kept clear: First of all, if in confinement, in the dust corner of the poultry-house mix about a pound of sulphur among the dust, ashes, and fine air-slacked lime for them to dust in. This will give the feathers a fine, glossy appearance. If infested with insects, damp the skin with a little water; then sprinkle with a pepper-box a little sulphur on the skin. Let a bird be covered with these insects, and they will all disappear in twelve hours. Previous to setting a hen, more particularly in warm weather, if the nest be slightly sprinkled with sulphur, there is no fear of the hen being annoyed by them. Many a fine brood of chickens pine away and die through nothing else, when no one knows the cause. Having observed hens leaving their nests just before hatching time, we examined the nest and found the eggs covered and literally alive with very small and minute vermin—almost too small to be observed with the naked eye. A free application of air-slacked lime, dry wood ashes and sulphur sprinkled over the eggs, will exterminate them; or, when the house is infested with them, clear out the fowls, close the doors, windows, etc., and fumigate with brimstone, by burning it in an iron vessel, and the fowls will not be annoyed afterwards.

HOW TO CLEANSE A CISTERN.—A simple thing I have accidently learned, and if not generally known ought to be, relating to stagnant, odorous water in cisterns. Many persons know how annoying this sometimes becomes. After frequent cleaning, and other experiments, all to no permanent utility, I was advised to put, say, two pounds of caustic soda in the water, and it purified it in a few hours. Since then, when I tried what is called concentrated lye, I had quite as good a result. One or both these articles can be obtained at any druggists.—*Ohio Farmer.*

Sunday Reading.

That thou mayest be fully convinced, that no angelic nature, nor any created being, can penetrate into the essence of the Deity, let us listen to the angels. How are they employed? Do they discourse together on the nature of God? Do they raise questions about it among themselves? By no means. What then is their occupation? They worship, they glorify, they adore; they sing praises with holy reverence and fear. Some of their angelic host sing, "*Glory unto God in the highest!*" The seraphim respond, "*Holy, Holy, Holy,*" and turn away their eyes, as unable to endure the faintest glimpse of Deity; while the cherubim cry aloud, "Blessed be His glory from His throne." . . . These many songs of men, recorded in the scriptures; Deborah's and Moses', David's and others, in the old Testament; Zachary's and Mary's, and old Simeon's in the new. But of any song of angels, from the first Adam to the second, I remember no record. But now CHRIST'S birth makes the angels also to sing *Hallelujah*, that is, glory unto God. Haply they sung before. St. Ambrose holds their hymns were earlier than the world. And, whereas, St. Paul calls them "ministering spirits," Theodoret saith their ministration was merely celebration of God's glory. They might have matter plenty, to praise the LORD before; but never had they argument, that so concerned them, as they have now. They sung before, (St. Ambrose saith,) Sanctus, Sanctus, Sanctus, Holy, Holy, Holy. But now for Sanctus, they sing Bonus; they turn Holy into Gracious; CHRIST'S birth yields benefit even unto the angels. For the saints fill up that gap, which was made among the angels by Lucifer's fall. *Quod in angelis lapsumest. ex hominibus redditum est,* saith St. Augustine. The ruins of the angels are repaired by man's redemption. They rejoice at the repentance of a sinner, because a repentant sinner on earth becomes a triumphant saint in heaven, and is so made "equal unto the angels."

Hunters and warriors make a great figure in the world; but he that feeds the sheep is more honorably employed than he who pursues the lion. The attendance of man upon those innocent creatures, which God hath ordained for his use, is an employment which succeeded to the life of paradise. The holy patriarchs and servants of God were taught to prefer the occupation of shepherds. Their riches consisted in flocks and herds; and it was their pleasure as well as their labor, to wait upon them in tents, amidst the various and beautiful scenery of the mountains, the groves, the fields, and streams of water. O, happy state of health, innocence, plenty and pleasure; plenty without luxury, and pleasure without corruption! How far preferable to that artificial state of life, into which we have been brought by over-strained refinement in civilization, and commerce too much extended! when corruption of manners, unnatural and consequently unhealthy modes of living, perplexity of law, consumption of property, and other kindred evils, conspire to render life so vain and unsatisfactory, that many throw it away in despair, as not worth having. A false glare of tinselled happiness is found amongst the rich and great, with such distressing want and misery amongst the poor, as nature knows nothing of; and which can arise only from the false principles, and selfish views and expedients of a weak and degenerate policy.

The worship of the Church Triumphant is wholly made up of hymns, without any mixture and alloy of supplications. For why? Their wants and wickedness, which are the subjects of them, are ceased; all the evils, which fill the litanies of the Church Militant, are passed away. And they, that are redeemed from them, have nothing to do in heaven but to sing praises to their Redeemer; which they do before the throne, as we read, "resting not day nor night." So that we may measure the excellency of praise above prayers and supplications with the same argument, as St. Paul doth the excellency of charity above faith and hope, not only from its properties, but from its duration, because "it never faileth." Praise ceaseth not with the state of mortality, like the other, but will accompany the saints into heaven, even as charity will; praise being, if we may so speak, the religion of the saints above, as charity their work and employment; who shall have, and who can be conceived to have, nothing to exercise either their devotion or communion, but the praises of God, and the love of one another.

Content of mind, springing from innocency of life, from the faithful discharge of our duty, from satisfaction of conscience, from a good hope in regard to God and our future state, is much to be preferred before all the delights which any temporal profession or position can afford.

Meditation is that exercise of the mind by which it recalls a known truth, as some kind of creatures do their food, to be ruminated upon till all the vicious parts be extracted.

☞ Stock will fatten better in the dark than in the light—better in the fall (on account of the longer nights) than in the summer. With less food, more weight can be secured in the dark than in the light. Experiments have sufficiently demonstrated this. The pig-pen should be dark—we have often seen it made so with the finest effect in favor of the fattening of stock. It is known that light toughens the tissue. For a work-horse the sun is excellent; for the working man the same; but not for the accumulation of fat. Yet how few people take advantage of these things.

Baltimore Markets, Oct. 20.

COFFEE.—Rio, 18½a19½c. gold, according to quality. Laguayra ——, and Java —— cts gold.

COTTON.—We quote prices as follows, viz:

Grades.	*Upland.*	*Gulf.*
Ordinary	33	—
Good do	35	—
Low Middling	38	—
Middling	39	—

FERTILIZERS.—Peruvian Guano, none in the market, nominal, $95. California, do. $65; Rodunda Island, $25; Reese & Co's. Soluble Pacific Guano, $65; Flour of Bone, $60; G. Ober's (Kettlewells) AA Manipulated, $70; A do., $60; Ammoniated Alkaline Phosphate, $55; Alkaline Phosphate, $45; Baltimore City Company's Fertilizer, $40; do., Flour of Bone, $60; do., Ground Bone, $45; do., Poudrette, $20; Baugh's Raw-bone Phosphate, $56;—all per ton of 2,000 lbs.; Pure Ground Plaster, $13.50a$14.00 per ton. Shell Lime, slacked, 6c., unslacked, 10c per bushel.

FISH.—*Mackerel.*—No. 1, $21a23; No. 2, $18a21; large new, No. 3, $14.75a15.25. *Herrings*—Shore—none. Labrador, $8.00a9.00; Potomac and Susquch'na, $8.50a9, Codfish, new, $7 50a$8.50.

FLOUR.—Howard Street Super and Cut Extra, $11 50a $11.75; Family, $14.50a15.00; City Mills Super, $10.75a 11.50; Baltimore Family, $16.50.

Rye Flour and Corn Meal.—Rye Flour, new, $7.25a 7.50; Corn Meal, $5.25a5.50.

GRAIN.—*Wheat.*—Good to prime Red, $3 10a3.12; Choice White—scarce—$3.60; good to prime, $3.00a$3.50 per bushel.

Corn.—White, $1.25; Yellow, $1.18 per bushel.

Rye.—$1.25 per bushel.

Oats—Heavy to light—ranging as to character from 57 a65c. per bushel.

HAY AND STRAW.—Timothy $26a28, and Rye Straw $21 a22 per ton.

BEANS.—Common, $2 50a3 00 as to quality.

POTATOES.—$4 00a4 25 per bbl.

PROVISIONS.—*Bacon.*—Shoulders, 17 cts.; Sides, 18a 19c; Hams, plain bagged, 24c.; sugar cured, 26c. per lb.

SALT.—Liverpool Ground Alum, $2.20a2.25; Fine, $3.10 a3.25; Turk's Island, 62½c. per bushel.

SEEDS.—Clover, held at $8.52a8.56; Timothy, $3.62a3.85 Flaxseed, $3 15

TOBACCO.—We give the range of prices as follows:

Maryland.	
Frosted to common	$2.50a 3.00
Sound common	3.50a 4.00
Middling	6.00a 8.00
Good to fine brown	10 00a15.00
Fancy	17.00a25.00
Upper country	3.00a30.00
Ground leaves, new	3.00a12.00
Ohio.	
Inferior to good common	4.00a 6.00
Brown and spangled	7.00a12.00
Good and fine red and spangled	13 00a17.00
Fine yellow and fancy	20.00a30.00

WHISKEY—$2.38a2.42 per gallon, in barrels.

WOOL.—We quote: Unwashed, 28a32 cts. per lb.; Tub-washed, 48a51 cts.; Fleece, common, 42a45 cts.; Pulled, No. 1, 30a35 cts.

CATTLE MARKET.—Common, $5 75a$6; Good, $7.50a$8. Prime Beeves, $8.25a8 30 per 100 lbs.

Sheep—5¾a7 cents per lb. gross.

Hogs—$14.00a14.50 per 100 lbs., net.

Wholesale Produce Market.

Prepared for the American Farmer by ELLICOTT & HEWES, *Produce and Commission Merchants, 67 Exchange Place.*

BALTIMORE, Oct. 20, 1866.

BUTTER.—Ohio, in brls. and kegs, solid packed, 25 to 30 cts.; Roll, 38; Virginia and Pennsylvania in kegs and tubs, 28 to 30; Glades, 35a45; Goshen, 45.

BEESWAX—42 cts.

CHEESE.—Eastern, 20; Western, 18 to 20.

DRIED FRUIT.—Apples, 10; Peaches, 17a20.

EGGS—In barrels, 32 cents per dozen.

FEATHERS—70 cents for good Southern.

LARD.—Brls. 18, kegs 19, jars and other country packages 20 cents.

TALLOW.—12 cents.

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Further particulars will be given in a future advertisement.

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july-tf

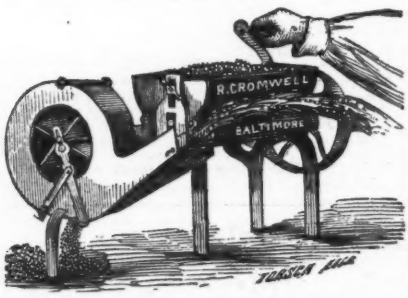
FLOUR OF RAW UNSTEAMED BONE.

Price Reduced to $60 per ton in Baltimore.

Is the Flour of Bone, prepared by the American Bone Flour Company, Pure?

The only question that any one can ask, or need ask, in regard to this Flour of Bone is, whether it is *pure*, raw burnt bone, for if it is pure, then its superior value and importance is a settled fact. Now, how are we to satisfy farmers on this point? First then, it is by no means a difficult matter for us to know with *certainty* that this bone is absolutely pure, that it is not adulterated, and it is not a secret, for we have no secrets. In order then to test its purity, we simply take from the barrels 100 parts, say 100 ounces, or 100 grains, put it in a suitable vessel, called a crucible, then place the crucible on a hot fire, and burn the bone to a *white ash*, which will be done in twenty minutes, then, after cooling, weigh the ashes and see how much has been burnt away. *Pure*, unsteamed bone will lose fully one-eighth of its weight by burning, which is the animal matter; now if it losses less, it is certainly adulterated or steamed, for if Plaster is mixed with it, it will not lose so much, because plaster will not burn, and there is nothing that can be used to adulterate with that will burn away in the same proportion, hence this is an infallible, certain test. We have frequently *tested this Bone Flour*, and in every instance have found it entirely free from adulteration. We continue to test all that we receive, hence we are able to give our customers the positive assurance that the Flour of Bone prepared by the Bone Flour Company is absolutely pure; the question of value is then settled, for the value of pure bones is well known, and when reduced to the fineness of flour, their value is increased a hundred fold, and they are as quick and active as dissolved bone or Super Phosphate, and are worth vastly more.

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General Agents for Southern States,
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FAMILY HOMINY MILL,
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I am now prepared to fill all orders for the above mills. Owing to the increasing demands for them for the last three years, makes it no longer an experiment, having been fairly tested before the public for the past five years, fully sustaining all and even more than has been claimed for it. Hundreds of farmers testify to its advantages and pronounce it the best mill in use. Every farmer should avail himself of the opportunity of procuring one of these mills, as the season is now at hand. The trade supplied at a liberal discount by the sole agent,

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Clover, Timothy, Herds, Orchard Kentucky Blue, and other field Seed for sale in lots to suit purchasers.
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B. M. WATSON, Old Colony Nurseries and Seed Establishment, Plymouth, Mass., offers a complete assortment of the hardiest and most productive sorts. The finest Grapes, new large Currants, Strawberries, Gooseberries, Blackberries, Roses, Flowering Plants, Bulbs, Lillies, Seeds, &c., may be *sent by mail*, prepaid, in perfect order. Fruit and Ornamental Trees and Shrubs, Evergreens, Hedge Plants, &c., will be sent by Express or Freight, paid to Boston.—Also, the True Cape Cod Cranberry, for cultivation in wet land, or in upland and Gardens, where it produces at the rate of 400 bushels to the acre; with directions for cultivation. Priced Descriptive Catalogues will be sent to any address. *Now is the best time for planting.* The best way to obtain *good Fruits and Flowers*, is to send direct to the Grower. Send for a Catalogue.
Wholesale Catalogues to the trade.
Agents wanted. nov-dec-feb-mar

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It has been my aim for years to secure the best breeds of stock, and have imported two Norman Stallions for quick heavy draught; also two Mares for breeding pure stock. BLACK HAWK, (Morgan), suited for fast draught, and of good riding qualities, and have bred from him seven years with entire satisfaction. One of the NORMANS WILL BE LET next season; the other and Black Hawk will continue at my Stables. Short-horn Cattle, some bred in Kentucky by Alexander Clay and others, and all are immediate descendants of imported Bulls, and now being crossed with a young Kentucky Bull of the best blood in America.

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A cross of Chester county and Kentucky Wolvern, and, just now, sows and pigs, and, generally, boar and sow shotes and pigs. The Cattle and Hogs will be priced to suit the times, delivered on the trains. S. W. FICKLIN,
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SECOND EDITION OF

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BY

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The publishers have the pleasure to announce a new edition of this elegant and popular work, which, according to the expressed judgment of candid and unbiassed critics in England and America, evinces the most extensive research, observation and experience; and which has also excited the fears of rivals.

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QUES. 2. *Why did a journalist embody the substance of these communications in an unfavorable notice, put in type before the volume was issued?*

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Receive and sell PRODUCE, of ALL kinds, on the most favorable terms.

We send our *Weekly Price Current*, to all consignors; also a marking plate, free of expense.

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Delaware,	1 year	old.....	$15	$120	$10	$80
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My Grape Vines are started under glass from single eyes, and then grown in the open air.

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Doolittle's Black-Cap Raspberry.....$3 per 100.
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Especial attention, of the trade and farming community, called to our celebrated Iron Geared *Horse Powers*, largely used in the South for ginning cotton, threshing grain, sawing wood, and propelling mills. It is warranted stronger, more durable, and lighter of draught than any other in the Market.

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NEAR
Fredericksburg,
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HENRY R. ROBEY.

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He will be glad to serve his old customers and the public generally, with his

Present Saleable Stock,

Which includes

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APPLE TREES.

(Particular attention given to the cultivation of Apples of Southern origin.)

PEARS, Standard and Dwarf,
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Fruit Trees, Grape Vines, Strawberries, Roses and Ornamental Shrubbery.
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GRAPES AND ROSES A SPECIALITY.
Planting and Care of Trees.

Most planters are SO careless! Friends, if you want Trees to thrive, plant early, on dry, deeply plowed ground. Keep roots from sun, air and frost, burying in ground again as soon as possible. If shriveled, bury tops and all in moist ground for ten days. Thin out and shorten in tops before planting, to balance the loss of roots in digging. Dig large holes, three feet across and two deep, or better still, plow out very deep furrow, filling up with best soil, so that trees shall stand only as deep as in Nursery. Straighten out all roots in natural order, fill in with best, fine, moist earth, and then tread down thoroughly, watering well, if dry, before filling up. Then MULCH—that is, cover the earth two feet each way from stems with coarse manure or straw, six inches deep. Always put corn or some hoed crop; NEVER grass or grain among young trees. All trees and plants in grassy yards, and dwarf trees also, must have special care. Wash bodies of apple trees in spring with strong soap suds. Kill off the caterpillars and leaf rollers. Let Fruit trees head low—within three or four feet of, and Evergreens from, the ground.

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INTERESTED,

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Farm under an excellent fence, beautifully laid off in six fields, and has two upland meadows.

☞ There is a RICH GOLD MINE, and a MANGANESE MINE.

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Also, for the Oyster Business, as well as a Ducking Point.

Situate on a peninsula, nearly surrounded by two creeks, with a bold approach of water navigable by steamboats, in Westmoreland county, Va.

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The place is most convenient of access; is guaranteed to be *healthy*, and commands a fine view of the Potomac river and the shores of Maryland.

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Troth's Early, Early York, Yellow Rareripe, Crawford's Early, Old Mixon Free, Moore's Favorite, Ward's Late Free, Harker's Seedling, Reeves' Favorite, Mary's Choice, Stump the World, Crawford's Late, Crockett's White Smock, Late Heath Free and Cling.

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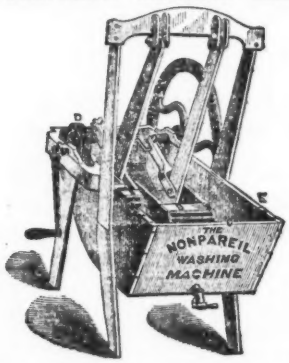
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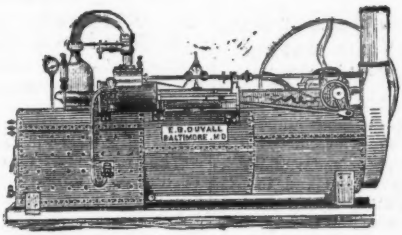
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Are pure, entertaining and instructive in a degree rarely attained in periodical literature.

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FOR FALL, 1866.

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Small Fruits of all kinds,
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Hardy Flowering Shrubs,
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Descriptive Catalogues mailed to any address, or can be had on application at the office of the "American Farmer."

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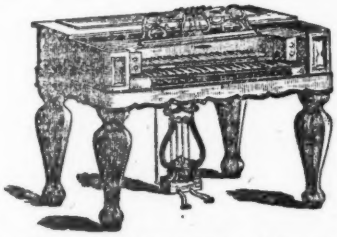
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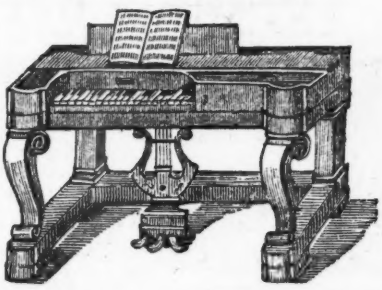
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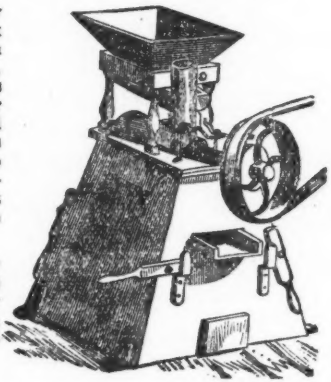


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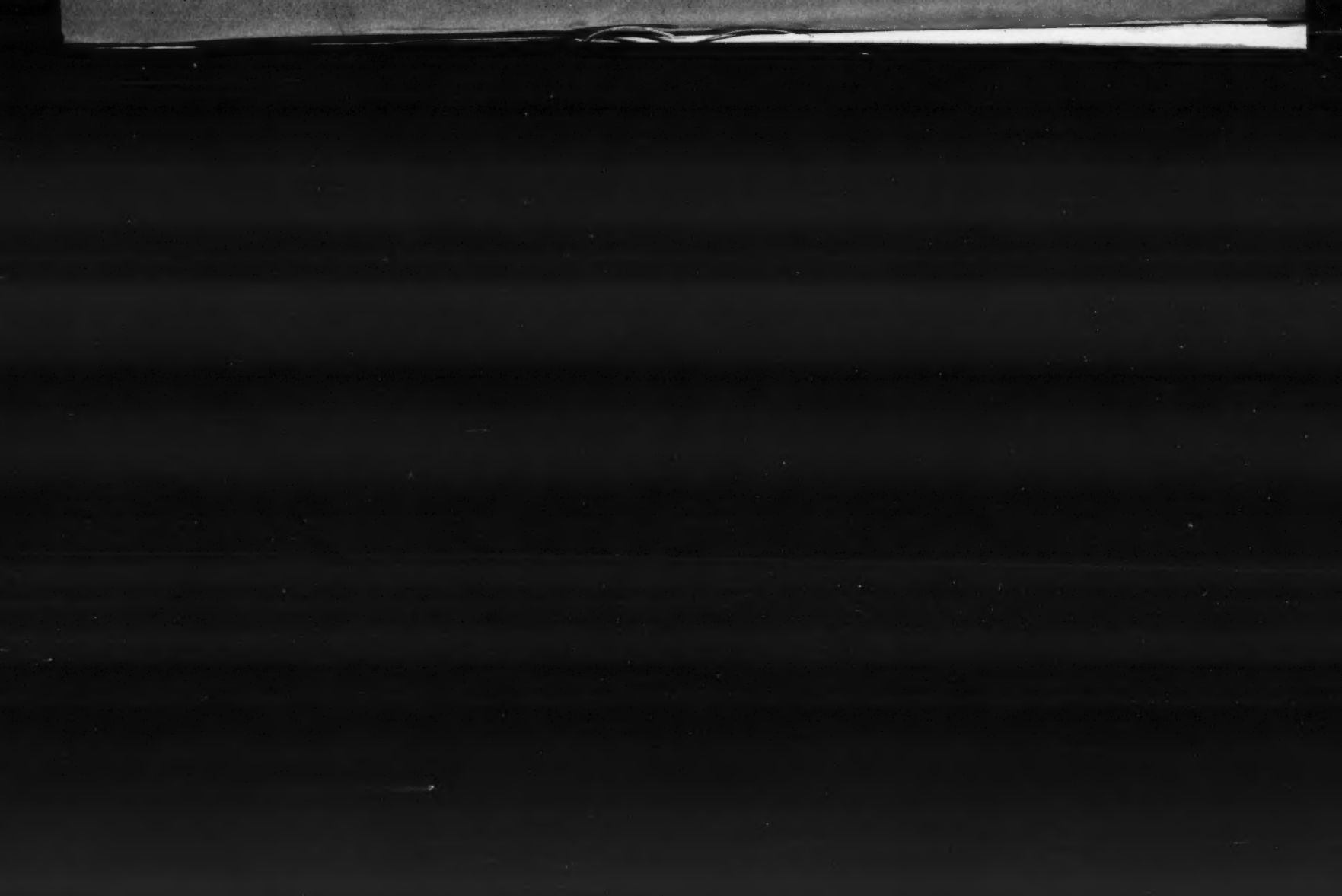
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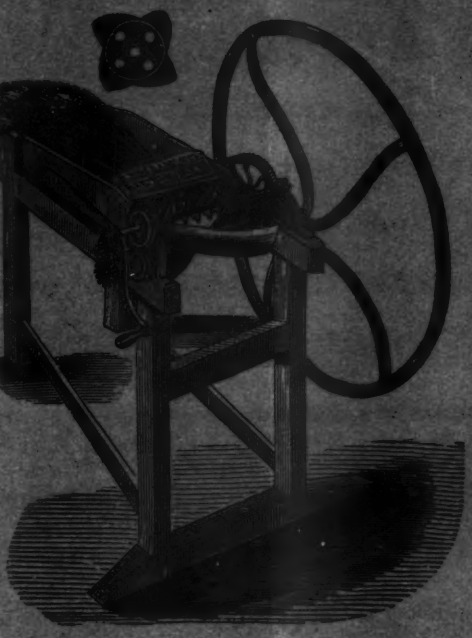
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